

SEQUENCE LISTING

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<110> Walke, D. Wade
      Hilbun, Erin
      Donoho, Gregory
      Turner, C. Alexander Jr.
      Hansen, Gwenn
      BeltrandelRio, Hector
      Van Sligtenhorst, Isaac

<120> Novel Human Kinases and Polynucleotides
      Encoding the Same, And Uses Thereof

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<150> US 09/854,856
<151> 2000-05-14

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 1905 1910 1915 1920
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 1955 1960 1965
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Glu	Gly	Asp	Gln	Gly	Leu	Glu	Ser	Leu	Gln	Gly	Lys	Asp	Asp	Tyr
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Phe	Ser	Gly	Ser	Gln	Lys	Leu	Glu	Gly	Glu	Phe	Lys	Gln	Pro	Ile
	1220						1225						1230	Pro
Ala	Ser	Ser	Met	Pro	Gln	Gln	Ile	Gly	Ile	Pro	Thr	Ser	Ser	Leu
	1235						1240					1245		Thr
Gln	Val	Val	His	Ser	Ala	Gly	Arg	Arg	Phe	Ile	Val	Ser	Pro	Val
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Glu Ser Arg Leu Arg Glu Ser Lys Val Phe Pro Ser Glu Ile Thr Asp
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 Thr Val Ala Ala Ser Thr Ala Gln Ser Pro Gly Met Asn Leu Ser His
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 Ser Ala Ser Ser Leu Ser Leu Gln Gln Ala Phe Ser Glu Leu Arg Arg
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 Ala Gln Met Thr Glu Gly Pro Asn Thr Ala Pro Pro Asn Phe Ser His
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 Thr Gly Pro Thr Phe Pro Val Val Pro Pro Phe Leu Ser Ser Ile Ala
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 Gly Val Pro Thr Thr Ala Ala Ala Thr Ala Pro Val Pro Ala Thr Ser
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 Val Val Ser Ser Thr Ala Leu Tyr Pro Ser Val Thr Val Ser Ala Thr
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 Ser Ala Ser Ala Gly Gly Ser Thr Ala Thr Pro Gly Pro Lys Pro Pro
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 Ala Val Val Ser Gln Gln Ala Ala Gly Ser Thr Thr Val Gly Ala Thr
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 Leu Ser Ile Gln Leu Ser Ser Ser Thr Ser Thr Pro Thr Leu Ala Glu
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 Thr Val Val Val Ser Ala His Ser Leu Asp Lys Thr Ser His Ser Ser
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 Thr Thr Gly Leu Ala Phe Ser Leu Ser Ala Pro Ser Ser Ser Ser Ser
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 Pro Gly Ala Gly Val Ser Ser Tyr Ile Ser Gln Pro Gly Gly Leu His
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 Pro Leu Val Ile Pro Ser Val Ile Ala Ser Thr Pro Ile Leu Pro Gln
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 Ala Ala Gly Pro Thr Ser Thr Pro Leu Leu Pro Gln Val Pro Ser Ile
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 Leu Ile His Ser Gln Pro Gln Pro Ala Leu Leu Pro Asn Gln Pro His
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 Thr His Cys Pro Glu Val Asp Ser Asp Thr Gln Pro Lys Ala Pro Gly
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 Ile Asp Asp Ile Lys Thr Leu Glu Glu Lys Leu Arg Ser Leu Phe Ser
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 Ser Leu Val Ile Glu Ser Thr Val Thr Pro Gly Ile Pro Thr Thr Ala
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Leu Glu Asp	Leu Asp Ala Gln Leu Arg Arg Thr Leu Ser Pro Glu Xaa				
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Ile Thr Val	Thr Ser Ala Val Gly Pro Val Ser Met Ala Ala Pro Thr				
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Ala Ile Thr	Glu Ala Gly Thr Gln Pro Gln Lys Gly Val Ser Gln Val				
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Lys Glu Gly	Pro Val Leu Ala Thr Ser Ser Gly Ala Gly Val Phe Lys				
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Met Gly Arg	Phe Gln Val Ser Val Ala Ala Asp Gly Ala Gln Lys Glu				
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Gly Lys Asn	Lys Ser Glu Asp Ala Lys Ser Val His Phe Glu Ser Ser				
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Thr Ser Glu	Ser Ser Val Leu Ser Ser Ser Ser Pro Glu Ser Thr Leu				
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Val Lys Pro	Glu Pro Asn Gly Ile Thr Ile Pro Gly Ile Ser Ser Asp				
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Asn Lys Val	Gly Arg Phe Ser Val Ser Lys Thr Glu Asp Lys Ile Thr				
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Asp Thr Lys	Lys Glu Gly Pro Val Ala Ser Pro Pro Phe Met Asp Leu				
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Ala Phe Leu	Ser Arg Asp Val Asp Asp Gly Ser Pro His Ser				
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Asp Lys His	Leu Lys Glu Ile Gln Asp Leu Gln Ser Arg Gln Lys His				
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Gly Gln Asn	Gln Leu Leu Gln Pro Leu Lys Pro Ser Pro Ser Ser Asp				
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Leu Ser Ala	Pro Gly Gln Gly Ile Lys Gln Pro Ser Ser Ser Lys Asn				
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Ser	Ser	Val	Gly	Glu	Lys	Leu	Gly	Ala	Ala	Ala	Asp	Ala	Val	Thr	
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Ser	Arg	Gly	Ala	Ala	Ala	Thr	Thr	Thr	Thr	Glu	His	Arg	Phe	Phe	
	65				70					75				80	
Arg	Arg	Ser	Val	Ile	Cys	Asp	Ser	Asn	Ala	Thr	Ala	Leu	Glu	Leu	Pro
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Gly	Leu	Pro	Leu	Ser	Leu	Pro	Gln	Pro	Ser	Ile	Pro	Ala	Ala	Val	Pro
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Gln	Ser	Ala	Pro	Pro	Glu	Pro	His	Arg	Glu	Glu	Thr	Val	Thr	Ala	Thr
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Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val	Pro	Ser	Ser	Thr
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Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Leu	Val	Gly	Ser	Lys	Glu
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Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly	Ser	Ala	Lys	Glu
			180					185					190		
Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Gln	Asp	Asp	Ile	Glu	Glu	Leu	Glu
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Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe	Leu	Lys	Phe	Asp
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Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu	Gln	Asp	Arg	Lys
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Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu	Ala	Glu	Met	Leu
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Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr	Asp	Ser	Trp	Glu
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Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe	Lys	Val	Met	Lys
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Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu	Lys	Gly	Leu	Gln
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Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg	Asp	Leu	Lys	Cys
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Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val	Lys	Ile	Gly	Asp
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Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala	Lys	Ser	Val	Ile
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Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met	Leu	Glu	Met	Ala
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Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala	Ala	Gln	Ile	Tyr
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Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe	Asp	Lys	Val	Ala
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Val	Glu	Gln	Ser	Ser	Ala	Ser	Gln	Thr	Gly	Ile	Lys
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Ala	Ser	Thr	Gly	Ile	Pro	Thr	Ala	Ser	Thr	Thr	Ser
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Thr	Gln	Val	Glu	Pro	Glu	Glu	Pro	Glu	Ala	Asp	Gln
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Gln	Thr	Val	Ser	Tyr	Gly	Ser	Gln	His	Glu	Gln	Ala
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His	Gly	Val	Tyr	Pro	Pro	Ser	Ser	Val	Ala	Gln	Gly
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Pro	His	Val	Ser	Thr	Ala	Gln	Thr	Gly	Phe	Ser	Ser
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Gly	Leu	Pro	Leu	Ser	Leu	Pro	Gln	Pro	Ser	Ile	Pro	Ala	Ala	Val	Pro
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Gln	Ser	Ala	Pro	Pro	Glu	Pro	His	Arg	Glu	Glu	Thr	Val	Thr	Ala	Thr
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Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val	Pro	Ser	Ser	Thr
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Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Leu	Val	Gly	Ser	Lys	Glu
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			180					185				190			
Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Gln	Asp	Asp	Ile	Glu	Glu	Leu	Glu
			195				200					205			
Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe	Leu	Lys	Phe	Asp
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Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu	Gln	Asp	Arg	Lys
			245					250					255		
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			260					265				270			
Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr	Asp	Ser	Trp	Glu
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Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met	Leu	Glu	Met	Ala
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 Tyr Val Cys Glu Gly Asp His Lys Thr Met Ala Lys Ala Ile Lys Asp
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 Arg Val Ser Leu Ile Lys Arg Lys Arg Glu Gln Arg Gln Leu Val Arg
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 Gln Tyr Gln Gln Pro Ser Ile Ser Val Leu Ser Asp Gly Thr Val Asp
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 Ser Gly Gln Glu Gly Ser Ser Val Phe Thr Glu Ser Arg Val Ser Ser Gln
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 675 680 685
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 690 695 700
 His Gly Val Tyr Pro Pro Ser Ser Val Ala Gln Gly Gln Ser Gln Gly
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 Tyr Pro Gly Asp Ser Asn Ile Ala Pro Ser Ser Asn Val Ala Ser Val
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 Cys Ile His Ser Thr Val Leu Xaa Pro Met Pro Thr Glu Val Leu
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 Pro Val Ala Val Ala Gln Pro Gln Ala Thr Gln Pro Thr Thr Leu Ala
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Ser Val Thr Val Ser Ala Thr	Ser Ala Ser Ala Gly Gly Ser Thr Ala	1295
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Ser Thr Pro Thr Leu Ala Glu	Thr Val Val Ser Ala His Ser Leu	1360
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Asp Lys Thr Ser His Ser Ser	Thr Thr Gly Leu Ala Phe Ser Leu Ser	1375
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 1845 1850 1855
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 <223> Xaa = Any Amino Acid

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 Gly Arg Thr Glu Glu Tyr Arg Arg Arg Arg His Thr Met Asp Lys Asp
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 Ser Arg Gly Ala Ala Ala Thr Thr Thr Thr Glu His Arg Phe Phe
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 Arg Arg Ser Val Ile Cys Asp Ser Asn Ala Thr Ala Leu Glu Leu Pro
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 Gly Leu Pro Leu Ser Leu Pro Gln Pro Ser Ile Pro Ala Ala Val Pro
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 Gln Ser Ala Pro Pro Glu Pro His Arg Glu Glu Thr Val Thr Ala Thr
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 Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala Ala Pro Gly
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 Glu Gln Ala Val Ala Gly Pro Ala Pro Ser Thr Val Pro Ser Ser Thr
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 Ser Lys Asp Arg Pro Val Ser Gln Pro Ser Leu Val Gly Ser Lys Glu
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 Glu Pro Pro Pro Ala Arg Ser Gly Ser Gly Gly Ser Ala Lys Glu
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 Pro Gln Glu Glu Arg Ser Gln Gln Gln Asp Asp Ile Glu Glu Leu Glu
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 Thr Lys Ala Val Gly Met Ser Asn Asp Gly Arg Phe Leu Lys Phe Asp
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 Ile Glu Ile Gly Arg Gly Ser Phe Lys Thr Val Tyr Lys Gly Leu Asp
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 Thr Glu Thr Thr Val Glu Val Ala Trp Cys Glu Leu Gln Asp Arg Lys
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 Leu Thr Lys Ser Glu Arg Gln Arg Phe Lys Glu Glu Ala Glu Met Leu
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 Lys Gly Leu Gln His Pro Asn Ile Val Arg Phe Tyr Asp Ser Trp Glu
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 Ser Thr Val Lys Gly Lys Lys Cys Ile Val Leu Val Thr Glu Leu Met
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Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val	Lys	Ile	Gly	Asp
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Lys	Ile	Ala	Ile	Lys	Leu	Trp	Leu	Arg	Ile	Glu	Asp	Ile	Lys	Lys	Leu
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Ala	Ser	Thr	Gly	Ile	Pro	Thr	Ala	Ser	Thr	Thr	Ser	Ala	Ser	Val	Ser
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Thr	Gln	Val	Glu	Pro	Glu	Glu	Pro	Glu	Ala	Asp	Gln	His	Gln	Gln	Leu
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His	Gly	Val	Tyr	Pro	Pro	Ser	Ser	Val	Ala	Gln	Gly	Gln	Ser	Gln	Gly
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Pro	Ala	Glu	Pro	Val	Ala	Val	Ala	Gln	Pro	Gln	Ala	Thr	Gln	Pro	Thr

Ser Tyr Ile Ser Gln Pro Gly Gly Leu His Pro Leu Val Ile Pro Ser
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 Val Ile Ala Ser Thr Pro Ile Leu Pro Gln Ala Ala Gly Pro Thr Ser
 1330 1335 1340
 Thr Pro Leu Leu Pro Gln Val Pro Ser Ile Pro Pro Leu Val Gln Pro
 1345 1350 1355 1360
 Val Ala Asn Val Pro Ala Val Gln Gln Thr Leu Ile His Ser Gln Pro
 1365 1370 1375
 Gln Pro Ala Leu Leu Pro Asn Gln Pro His Thr His Cys Pro Glu Val
 1380 1385 1390
 Asp Ser Asp Thr Gln Pro Lys Ala Pro Gly Ile Asp Asp Ile Lys Thr
 1395 1400 1405
 Leu Glu Glu Lys Leu Arg Ser Leu Phe Ser Glu His Ser Ser Ser Gly
 1410 1415 1420
 Ala Gln His Ala Ser Val Ser Leu Glu Thr Ser Leu Val Ile Glu Ser
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 Gly Pro Ser Leu Thr Gln Ser Gln Gln Pro Leu Glu Asp Leu Asp Ala
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 Gln Leu Arg Arg Thr Leu Ser Pro Glu Xaa Ile Thr Val Thr Ser Ala
 1555 1560 1565
 Val Gly Pro Val Ser Met Ala Ala Pro Thr Ala Ile Thr Glu Ala Gly
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 Lys Thr Thr Ala Ser Glu Ala Lys Ser Asp Thr Gly Gln Pro Thr Lys
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 Val Gly Arg Phe Gln Val Thr Thr Thr Ala Asn Lys Val Gly Arg Phe
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 Ser Val Ser Lys Thr Glu Asp Lys Ile Thr Asp Thr Lys Lys Glu Gly
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 Leu Asn Gly Pro Ser Ser Asp Pro Glu Ala Ala Phe Leu Ser Arg Asp
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 Val Asp Asp Gly Ser Gly Ser Pro His Ser Pro His Gln Leu Ser Ser
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 Lys Ser Leu Pro Ser Gln Asn Leu Ser Gln Ser Leu Ser Asn Ser Phe
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 Asn Ser Ser Tyr Met Ser Ser Asp Asn Glu Ser Asp Ile Glu Asp Glu

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<211> 1999

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

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<223> Xaa = Any Amino Acid

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Ser	Ser	Val	Gly	Glu	Lys	Leu	Gly	Ala	Ala	Ala	Ala	Asp	Ala	Val	Thr
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Gly	Arg	Thr	Glu	Glu	Tyr	Arg	Arg	Arg	Arg	His	Thr	Met	Asp	Lys	Asp
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Ser	Arg	Gly	Ala	Ala	Ala	Thr	Thr	Thr	Thr	Thr	Glu	His	Arg	Phe	Phe
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Arg	Arg	Ser	Val	Ile	Cys	Asp	Ser	Asn	Ala	Thr	Ala	Leu	Glu	Leu	Pro
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Gly	Leu	Pro	Leu	Ser	Leu	Pro	Gln	Pro	Ser	Ile	Pro	Ala	Ala	Val	Pro
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Gln	Ser	Ala	Pro	Pro	Glu	Pro	His	Arg	Glu	Glu	Thr	Val	Thr	Ala	Thr
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Ala	Thr	Ser	Gln	Val	Ala	Gln	Gln	Pro	Pro	Ala	Ala	Ala	Ala	Pro	Gly
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Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val	Pro	Ser	Ser	Thr
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Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Leu	Val	Gly	Ser	Lys	Glu
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Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly	Ser	Ala	Lys	Glu
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Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Gln	Asp	Asp	Ile	Glu	Glu	Leu	Glu
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 Ile Glu Ile Gly Arg Gly Ser Phe Lys Thr Val Tyr Lys Gly Leu Asp
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 Thr Glu Thr Thr Val Glu Val Ala Trp Cys Glu Leu Gln Asp Arg Lys
 245 250 255
 Leu Thr Lys Ser Glu Arg Gln Arg Phe Lys Glu Glu Ala Glu Met Leu
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 Lys Gly Leu Gln His Pro Asn Ile Val Arg Phe Tyr Asp Ser Trp Glu
 275 280 285
 Ser Thr Val Lys Gly Lys Lys Cys Ile Val Leu Val Thr Glu Leu Met
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 Thr Ser Gly Thr Leu Lys Thr Tyr Leu Lys Arg Phe Lys Val Met Lys
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 Ile Lys Val Leu Arg Ser Trp Cys Arg Gln Ile Leu Lys Gly Leu Gln
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 Phe Leu His Thr Arg Thr Pro Pro Ile Ile His Arg Asp Leu Lys Cys
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 Asp Asn Ile Phe Ile Thr Gly Pro Thr Gly Ser Val Lys Ile Gly Asp
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 Leu Glu Leu Ala Thr Leu Lys Arg Ala Ser Phe Ala Lys Ser Val Ile
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 Gly Thr Pro Glu Phe Met Ala Pro Glu Met Tyr Glu Glu Lys Tyr Asp
 385 390 395
 Glu Ser Val Asp Val Tyr Ala Phe Gly Met Cys Met Leu Glu Met Ala
 405 410 415
 Thr Ser Glu Tyr Pro Tyr Ser Glu Cys Gln Asn Ala Ala Gln Ile Tyr
 420 425 430
 Arg Arg Val Thr Ser Gly Val Lys Pro Ala Ser Phe Asp Lys Val Ala
 435 440 445
 Ile Pro Glu Val Lys Glu Ile Ile Glu Gly Cys Ile Arg Gln Asn Lys
 450 455 460
 Asp Glu Arg Tyr Ser Ile Lys Asp Leu Leu Asn His Ala Phe Phe Gln
 465 470 475
 Glu Glu Thr Gly Val Arg Val Glu Leu Ala Glu Glu Asp Asp Gly Glu
 485 490 495
 Lys Ile Ala Ile Lys Leu Trp Leu Arg Ile Glu Asp Ile Lys Lys Leu
 500 505 510
 Lys Gly Lys Tyr Lys Asp Asn Glu Ala Ile Glu Phe Ser Phe Asp Leu
 515 520 525
 Glu Arg Asp Val Pro Glu Asp Val Ala Gln Glu Met Val Glu Ser Gly
 530 535 540
 Tyr Val Cys Glu Gly Asp His Lys Thr Met Ala Lys Ala Ile Lys Asp
 545 550 555
 Arg Val Ser Leu Ile Lys Arg Lys Arg Glu Gln Arg Gln Leu Val Arg
 565 570 575
 Glu Glu Gln Glu Lys Lys Lys Gln Glu Glu Ser Ser Leu Lys Gln Gln
 580 585 590
 Val Glu Gln Ser Ser Ala Ser Gln Thr Gly Ile Lys Gln Leu Pro Ser
 595 600 605
 Ala Ser Thr Gly Ile Pro Thr Ala Ser Thr Thr Ser Ala Ser Val Ser
 610 615 620
 Thr Gln Val Glu Pro Glu Glu Pro Glu Ala Asp Gln His Gln Gln Leu
 625 630 635
 Gln Tyr Gln Gln Pro Ser Ile Ser Val Leu Ser Asp Gly Thr Val Asp
 645 650 655
 Ser Gly Gln Gly Ser Ser Val Phe Thr Glu Ser Arg Val Ser Ser Gln
 660 665 670
 Gln Thr Val Ser Tyr Gly Ser Gln His Glu Gln Ala His Ser Thr Gly
 675 680 685
 Thr Val Pro Gly His Ile Pro Ser Thr Val Gln Ala Gln Ser Gln Pro
 690 695 700
 His Gly Val Tyr Pro Pro Ser Ser Val Ala Gln Gly Gln Ser Gln Gly

705					710					715					720
Gln	Pro	Ser	Ser	Ser	Ser	Leu	Thr	Gly	Val	Ser	Ser	Ser	Gln	Pro	Ile
				725						730				735	
Gln	His	Pro	Gln	Gln	Gln	Gln	Gly	Ile	Gln	Gln	Thr	Ala	Pro	Pro	Gln
			740					745					750		
Gln	Thr	Val	Gln	Tyr	Ser	Leu	Ser	Gln	Thr	Ser	Thr	Ser	Ser	Glu	Ala
		755						760				765			
Thr	Thr	Ala	Gln	Pro	Val	Ser	Gln	Pro	Gln	Ala	Pro	Gln	Val	Leu	Pro
	770					775					780				
Gln	Val	Ser	Ala	Gly	Lys	Gln	Ser	Thr	Gln	Gly	Val	Ser	Gln	Val	Ala
785					790					795					800
Pro	Ala	Glu	Pro	Val	Ala	Val	Ala	Gln	Pro	Gln	Ala	Thr	Gln	Pro	Thr
				805					810					815	
Thr	Leu	Ala	Ser	Ser	Val	Asp	Ser	Ala	His	Ser	Asp	Val	Ala	Ser	Gly
		820						825					830		
Met	Ser	Asp	Gly	Asn	Glu	Asn	Val	Pro	Ser	Ser	Ser	Gly	Arg	His	Glu
		835					840					845			
Gly	Arg	Thr	Thr	Lys	Arg	His	Tyr	Arg	Lys	Ser	Val	Arg	Ser	Arg	Ser
	850					855					860				
Arg	His	Glu	Lys	Thr	Ser	Arg	Pro	Lys	Leu	Arg	Ile	Leu	Asn	Val	Ser
865					870					875					880
Asn	Lys	Gly	Asp	Arg	Val	Val	Glu	Cys	Gln	Leu	Glu	Thr	His	Asn	Arg
			885						890					895	
Lys	Met	Val	Thr	Phe	Lys	Phe	Asp	Leu	Asp	Gly	Asp	Asn	Pro	Glu	Glu
		900						905					910		
Ile	Ala	Thr	Ile	Met	Val	Asn	Asn	Asp	Phe	Ile	Leu	Ala	Ile	Glu	Arg
		915					920					925			
Glu	Ser	Phe	Val	Asp	Gln	Val	Arg	Glu	Ile	Ile	Glu	Lys	Ala	Asp	Glu
	930					935					940				
Met	Leu	Ser	Glu	Asp	Val	Ser	Val	Glu	Pro	Glu	Gly	Asp	Gln	Gly	Leu
945				950						955					960
Glu	Ser	Leu	Gln	Gly	Lys	Asp	Asp	Tyr	Gly	Phe	Ser	Gly	Ser	Gln	Lys
			965						970					975	
Leu	Glu	Gly	Glu	Phe	Lys	Gln	Pro	Ile	Pro	Ala	Ser	Ser	Met	Pro	Gln
		980						985					990		
Gln	Ile	Gly	Ile	Pro	Thr	Ser	Ser	Leu	Thr	Gln	Val	Val	His	Ser	Ala
	995						1000					1005			
Gly	Arg	Arg	Phe	Ile	Val	Ser	Pro	Val	Pro	Glu	Ser	Arg	Leu	Arg	Glu
	1010					1015					1020				
Ser	Lys	Val	Phe	Pro	Ser	Glu	Ile	Thr	Asp	Thr	Val	Ala	Ala	Ser	Thr
1025						1030				1035					1040
Ala	Gln	Ser	Pro	Gly	Met	Asn	Leu	Ser	His	Ser	Ala	Ser	Ser	Leu	Ser
			1045						1050					1055	
Leu	Gln	Gln	Ala	Phe	Ser	Glu	Leu	Arg	Arg	Ala	Gln	Met	Thr	Glu	Gly
		1060					1065						1070		
Pro	Asn	Thr	Ala	Pro	Pro	Asn	Phe	Ser	His	Thr	Gly	Pro	Thr	Phe	Pro
	1075					1080					1085				
Val	Val	Pro	Pro	Phe	Leu	Ser	Ser	Ile	Ala	Gly	Val	Pro	Thr	Thr	Ala
	1090					1095					1100				
Ala	Ala	Thr	Ala	Pro	Val	Pro	Ala	Thr	Ser	Ser	Pro	Pro	Asn	Asp	Ile
1105					1110					1115					1120
Ser	Thr	Ser	Val	Ile	Gln	Ser	Glu	Val	Thr	Val	Pro	Thr	Glu	Glu	Gly
			1125						1130					1135	
Ile	Ala	Gly	Val	Ala	Thr	Ser	Thr	Gly	Val	Val	Thr	Ser	Gly	Gly	Leu
	1140						1145						1150		
Pro	Ile	Pro	Pro	Val	Ser	Glu	Ser	Pro	Val	Leu	Ser	Ser	Val	Val	Ser
	1155					1160					1165				
Ser	Ile	Thr	Ile	Pro	Ala	Val	Val	Ser	Ile	Ser	Thr	Thr	Ser	Pro	Ser
	1170					1175					1180				
Leu	Gln	Val	Pro	Thr	Ser	Thr	Ser	Glu	Ile	Val	Val	Ser	Ser	Thr	Ala
1185					1190					1195					1200
Leu	Tyr	Pro	Ser	Val	Thr	Val	Ser	Ala	Thr	Ser	Ala	Ser	Ala	Gly	Gly
			1205						1210					1215	

Ser Thr Ala Thr Pro Gly Pro Lys Pro Pro Ala Val Val Ser Gln Gln
 1220 1225 1230
 Ala Ala Gly Ser Thr Thr Val Gly Ala Thr Leu Thr Ser Val Ser Thr
 1235 1240 1245
 Thr Thr Ser Phe Pro Ser Thr Ala Ser Gln Leu Ser Ile Gln Leu Ser
 1250 1255 1260
 Ser Ser Thr Ser Thr Pro Thr Leu Ala Glu Thr Val Val Val Ser Ala
 1265 1270 1275 1280
 His Ser Leu Asp Lys Thr Ser His Ser Ser Thr Thr Gly Leu Ala Phe
 1285 1290 1295
 Ser Leu Ser Ala Pro Ser Ser Ser Ser Pro Gly Ala Gly Val Ser
 1300 1305 1310
 Ser Tyr Ile Ser Gln Pro Gly Gly Leu His Pro Leu Val Ile Pro Ser
 1315 1320 1325
 Val Ile Ala Ser Thr Pro Ile Leu Pro Gln Ala Ala Gly Pro Thr Ser
 1330 1335 1340
 Thr Thr Leu Leu Pro Gln Val Pro Ser Ile Pro Pro Leu Val Gln Pro
 1345 1350 1355 1360
 Val Ala Asn Val Pro Ala Val Gln Gln Thr Leu Ile His Ser Gln Pro
 1365 1370 1375
 Gln Pro Ala Leu Leu Pro Asn Gln Pro His Thr His Cys Pro Glu Val
 1380 1385 1390
 Asp Ser Asp Thr Gln Pro Lys Ala Pro Gly Ile Asp Asp Ile Lys Thr
 1395 1400 1405
 Leu Glu Glu Lys Leu Arg Ser Leu Phe Ser Glu His Ser Ser Ser Gly
 1410 1415 1420
 Ala Gln His Ala Ser Val Ser Leu Glu Thr Ser Leu Val Ile Glu Ser
 1425 1430 1435 1440
 Thr Val Thr Pro Gly Ile Pro Thr Thr Ala Val Ala Pro Ser Lys Leu
 1445 1450 1455
 Leu Thr Ser Thr Thr Ser Thr Cys Leu Pro Pro Thr Asn Leu Pro Leu
 1460 1465 1470
 Gly Thr Val Ala Leu Pro Val Thr Pro Val Val Thr Pro Gly Gln Val
 1475 1480 1485
 Ser Thr Pro Val Ser Thr Thr Thr Ser Gly Val Lys Pro Gly Thr Ala
 1490 1495 1500
 Pro Ser Lys Pro Pro Leu Thr Lys Ala Pro Val Leu Pro Val Gly Thr
 1505 1510 1515 1520
 Glu Leu Pro Ala Gly Thr Leu Pro Ser Glu Gln Leu Pro Pro Phe Pro
 1525 1530 1535
 Gly Pro Ser Leu Thr Gln Ser Gln Gln Pro Leu Glu Asp Leu Asp Ala
 1540 1545 1550
 Gln Leu Arg Arg Thr Leu Ser Pro Glu Xaa Ile Thr Val Thr Ser Ala
 1555 1560 1565
 Val Gly Pro Val Ser Met Ala Ala Pro Thr Ala Ile Thr Glu Ala Gly
 1570 1575 1580
 Thr Gln Pro Gln Lys Gly Val Ser Gln Val Lys Glu Gly Pro Val Leu
 1585 1590 1595 1600
 Ala Thr Ser Ser Gly Ala Gly Val Phe Lys Met Gly Arg Phe Gln Val
 1605 1610 1615
 Ser Val Ala Ala Asp Gly Ala Gln Lys Glu Gly Lys Asn Lys Ser Glu
 1620 1625 1630
 Asp Ala Lys Ser Val His Phe Glu Ser Ser Thr Ser Glu Ser Ser Val
 1635 1640 1645
 Leu Ser Ser Ser Ser Pro Glu Ser Thr Leu Val Lys Pro Glu Pro Asn
 1650 1655 1660
 Gly Ile Thr Ile Pro Gly Ile Ser Ser Asp Val Pro Glu Ser Ala His
 1665 1670 1675 1680
 Lys Thr Thr Ala Ser Glu Ala Lys Ser Asp Thr Gly Gln Pro Thr Lys
 1685 1690 1695
 Val Gly Arg Phe Gln Val Thr Thr Thr Ala Asn Lys Val Gly Arg Phe
 1700 1705 1710
 Ser Val Ser Lys Thr Glu Asp Lys Ile Thr Asp Thr Lys Lys Glu Gly

115										120										125																													
Ala	Thr	Ser	Gln	Val	Ala	Gln	Gln	Pro	Pro	Ala	Ala	Ala	Ala	Pro	Gly	Ala	Thr	Ser	Gln	Val	Ala	Gln	Gln	Pro	Pro	Ala	Ala	Ala	Pro	Gly	Ala	Thr	Ser	Gln	Val	Ala	Gln	Gln	Pro	Pro	Ala	Ala	Ala	Ala	Pro	Gly			
130																140															150																		
Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val	Pro	Ser	Ser	Thr	Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val	Pro	Ser	Ser	Thr	Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val	Pro	Ser	Ser	Thr		
145																155															165																		
Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Ser	Leu	Val	Gly	Ser	Lys	Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Ser	Leu	Val	Gly	Ser	Lys	Glu	Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Ser	Leu	Val	Gly	Ser	Lys	Glu
Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly	Ser	Ala	Lys	Glu	Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly	Ser	Ala	Lys	Glu	Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly	Ser	Ala	Lys	Glu		
Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Gln	Asp	Asp	Ile	Glu	Glu	Leu	Glu	Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Asp	Asp	Ile	Glu	Glu	Leu	Glu	Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Asp	Asp	Ile	Glu	Glu	Leu	Glu				
Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe	Leu	Lys	Phe	Asp	Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe	Leu	Lys	Phe	Asp	Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe	Leu	Lys	Phe	Asp		
Ile	Glu	Ile	Gly	Arg	Gly	Ser	Phe	Lys	Thr	Val	Tyr	Lys	Gly	Leu	Asp	Ile	Glu	Ile	Gly	Arg	Gly	Ser	Phe	Lys	Thr	Val	Tyr	Lys	Gly	Leu	Asp	Ile	Glu	Ile	Gly	Arg	Gly	Ser	Phe	Lys	Thr	Val	Tyr	Lys	Gly	Leu	Asp		
225																235															245																		
Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu	Gln	Asp	Arg	Lys	Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu	Gln	Asp	Arg	Lys	Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu	Gln	Asp	Arg	Lys		
Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu	Ala	Glu	Met	Leu	Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu	Ala	Glu	Met	Leu	Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu	Ala	Glu	Met	Leu		
Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr	Asp	Ser	Trp	Glu	Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr	Asp	Ser	Trp	Glu	Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr	Asp	Ser	Trp	Glu		
Ser	Thr	Val	Lys	Gly	Lys	Lys	Cys	Ile	Val	Leu	Val	Thr	Glu	Leu	Met	Ser	Thr	Val	Lys	Gly	Lys	Lys	Cys	Ile	Val	Leu	Val	Thr	Glu	Leu	Met	Ser	Thr	Val	Lys	Gly	Lys	Lys	Cys	Ile	Val	Leu	Val	Thr	Glu	Leu	Met		
Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe	Lys	Val	Met	Lys	Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe	Lys	Val	Met	Lys	Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe	Lys	Val	Met	Lys		
305																315															325																		
Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu	Lys	Gly	Leu	Gln	Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu	Lys	Gly	Leu	Gln	Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu	Lys	Gly	Leu	Gln		
Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg	Asp	Leu	Lys	Cys	Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg	Asp	Leu	Lys	Cys	Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg	Asp	Leu	Lys	Cys		
Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val	Lys	Ile	Gly	Asp	Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val	Lys	Ile	Gly	Asp	Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val	Lys	Ile	Gly	Asp		
Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala	Lys	Ser	Val	Ile	Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala	Lys	Ser	Val	Ile	Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala	Lys	Ser	Val	Ile		
Gly	Thr	Pro	Glu	Phe	Met	Ala	Pro	Glu	Met	Tyr	Glu	Glu	Lys	Tyr	Asp	Gly	Thr	Pro	Glu	Phe	Met	Ala	Pro	Glu	Met	Tyr	Glu	Glu	Lys	Tyr	Asp	Gly	Thr	Pro	Glu	Phe	Met	Ala	Pro	Glu	Met	Tyr	Glu	Glu	Lys	Tyr	Asp		
385																395															405																		
Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met	Leu	Glu	Met	Ala	Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met	Leu	Glu	Met	Ala	Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met	Leu	Glu	Met	Ala		
Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala	Ala	Gln	Ile	Tyr	Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala	Ala	Gln	Ile	Tyr	Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala	Ala	Gln	Ile	Tyr		
Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe	Asp	Lys	Val	Ala	Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe	Asp	Lys	Val	Ala	Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe	Asp	Lys	Val	Ala		
Ile	Pro	Glu	Val	Lys	Glu	Ile	Ile	Glu	Gly	Cys	Ile	Arg	Gln	Asn	Lys	Ile	Pro	Glu	Val	Lys	Glu	Ile	Ile	Glu	Gly	Cys	Ile	Arg	Gln	Asn	Lys	Ile	Pro	Glu	Val	Lys	Glu	Ile	Ile	Glu	Gly	Cys	Ile	Arg	Gln	Asn	Lys		
Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His	Ala	Phe	Phe	Gln	Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His	Ala	Phe	Phe	Gln	Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His	Ala	Phe	Phe	Gln		
Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu	Asp	Asp	Gly	Glu	Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu	Asp	Asp	Gly	Glu	Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu	Asp	Asp	Gly	Glu		
Lys	Ile	Ala	Ile	Lys	Leu	Trp	Leu	Arg	Ile	Glu	Asp	Ile	Lys	Lys	Leu	Lys	Ile	Ala	Ile	Lys	Leu	Trp	Leu	Arg	Ile	Glu	Asp	Ile	Lys	Lys	Leu	Lys	Ile	Ala	Ile	Lys	Leu	Trp	Leu	Arg	Ile	Glu	Asp	Ile	Lys	Lys	Leu		

Thr Gln Val Glu Pro Glu Glu Pro Glu Ala Asp Gln His Gln Gln Leu
 625 630 635 640
 Gln Tyr Gln Gln Pro Ser Ile Ser Val Leu Ser Asp Gly Thr Val Asp
 645 650 655
 Ser Gly Gln Gly Ser Ser Val Phe Thr Glu Ser Arg Val Ser Ser Gln
 660 665 670
 Gln Thr Val Ser Tyr Gly Ser Gln His Glu Gln Ala His Ser Thr Gly
 675 680 685
 Thr Val Pro Gly His Ile Pro Ser Thr Val Gln Ala Gln Ser Gln Pro
 690 695 700
 His Gly Val Tyr Pro Pro Ser Ser Val Gln Gln Gly Ile Gln Gln Thr
 705 710 715 720
 Ala Pro Pro Gln Gln Thr Val Gln Tyr Ser Leu Ser Gln Thr Ser Thr
 725 730 735
 Ser Ser Glu Ala Thr Thr Ala Gln Pro Val Ser Gln Pro Gln Ala Pro
 740 745 750
 Gln Val Leu Pro Gln Val Ser Ala Gly Lys Gln Leu Pro Val Ser Gln
 755 760 765
 Pro Val Pro Thr Ile Gln Gly Glu Pro Gln Ile Pro Val Ala Thr Gln
 770 775 780
 Pro Ser Val Val Pro Val His Ser Gly Ala His Phe Leu Pro Val Gly
 785 790 795 800
 Gln Pro Leu Pro Thr Pro Leu Leu Pro Gln Tyr Pro Val Ser Gln Ile
 805 810 815
 Pro Ile Ser Thr Pro His Val Ser Thr Ala Gln Thr Gly Phe Ser Ser
 820 825 830
 Leu Pro Ile Thr Met Ala Ala Gly Ile Thr Gln Pro Leu Leu Thr Leu
 835 840 845
 Ala Ser Ser Ala Thr Thr Ala Ala Ile Pro Gly Val Ser Thr Val Val
 850 855 860
 Pro Ser Gln Leu Pro Thr Leu Leu Gln Pro Val Thr Gln Leu Pro Ser
 865 870 875 880
 Gln Val His Pro Gln Leu Leu Gln Pro Ala Val Gln Ser Met Gly Ile
 885 890 895
 Pro Ala Asn Leu Gly Gln Ala Ala Glu Val Pro Leu Ser Ser Gly Asp
 900 905 910
 Val Leu Tyr Gln Gly Phe Pro Pro Arg Leu Pro Pro Gln Tyr Pro Gly
 915 920 925
 Asp Ser Asn Ile Ala Pro Ser Ser Asn Val Ala Ser Val Cys Ile His
 930 935 940
 Ser Thr Val Leu Xaa Pro Pro Met Pro Thr Glu Val Leu Ala Thr Pro
 945 950 955 960
 Gly Tyr Phe Pro Thr Val Val Gln Pro Tyr Val Glu Ser Asn Leu Leu
 965 970 975
 Val Pro Met Gly Gly Val Gly Gly Gln Val Gln Val Ser Gln Pro Gly
 980 985 990
 Gly Ser Leu Ala Gln Ala Pro Thr Thr Ser Ser Gln Gln Ala Val Leu
 995 1000 1005
 Glu Ser Thr Gln Gly Val Ser Gln Val Ala Pro Ala Glu Pro Val Ala
 1010 1015 1020
 Val Ala Gln Pro Gln Ala Thr Gln Pro Thr Thr Leu Ala Ser Ser Val
 1025 1030 1035 1040
 Asp Ser Ala His Ser Asp Val Ala Ser Gly Met Ser Asp Gly Asn Glu
 1045 1050 1055
 Asn Val Pro Ser Ser Ser Gly Arg His Glu Gly Arg Thr Thr Lys Arg
 1060 1065 1070
 His Tyr Arg Lys Ser Val Arg Ser Arg Ser Arg His Glu Lys Thr Ser
 1075 1080 1085
 Arg Pro Lys Leu Arg Ile Leu Asn Val Ser Asn Lys Gly Asp Arg Val
 1090 1095 1100
 Val Glu Cys Gln Leu Glu Thr His Asn Arg Lys Met Val Thr Phe Lys
 1105 1110 1115 1120
 Phe Asp Leu Asp Gly Asp Asn Pro Glu Glu Ile Ala Thr Ile Met Val

1125										1130										1135																													
Asn	Asn	Asp	Phe	Ile	Leu	Ala	Ile	Glu	Arg	Glu	Ser	Phe	Val	Asp	Gln	Asn	Asn	Asp	Phe	Ile	Leu	Ala	Ile	Glu	Arg	Glu	Ser	Phe	Val	Asp	Gln	Asn	Asn	Asp	Phe	Ile	Leu	Ala	Ile	Glu	Arg	Glu	Ser	Phe	Val	Asp	Gln		
Val	Arg	Glu	Ile	Ile	Glu	Lys	Ala	Asp	Glu	Met	Leu	Ser	Glu	Asp	Val	Val	Arg	Glu	Ile	Ile	Glu	Lys	Ala	Asp	Glu	Met	Leu	Ser	Glu	Asp	Val	Val	Arg	Glu	Ile	Ile	Glu	Lys	Ala	Asp	Glu	Met	Leu	Ser	Glu	Asp	Val		
Ser	Val	Glu	Pro	Glu	Gly	Asp	Gln	Gly	Leu	Glu	Ser	Leu	Gln	Gly	Lys	Ser	Val	Glu	Pro	Glu	Gly	Asp	Gln	Gly	Leu	Glu	Ser	Leu	Gln	Gly	Lys	Ser	Val	Glu	Pro	Glu	Gly	Asp	Gln	Gly	Leu	Glu	Ser	Leu	Gln	Gly	Lys		
Asp	Asp	Tyr	Gly	Phe	Ser	Gly	Ser	Gln	Lys	Leu	Glu	Gly	Glu	Phe	Lys	Asp	Asp	Tyr	Gly	Phe	Ser	Gly	Ser	Gln	Lys	Leu	Glu	Gly	Glu	Phe	Lys	Asp	Asp	Tyr	Gly	Phe	Ser	Gly	Ser	Gln	Lys	Leu	Glu	Gly	Glu	Phe	Lys		
1185																1185																	1185																
Gln	Pro	Ile	Pro	Ala	Ser	Ser	Met	Pro	Gln	Gln	Ile	Gly	Ile	Pro	Thr	Gln	Pro	Ile	Pro	Ala	Ser	Ser	Met	Pro	Gln	Gln	Ile	Gly	Ile	Pro	Thr	Gln	Pro	Ile	Pro	Ala	Ser	Ser	Met	Pro	Gln	Gln	Ile	Gly	Ile	Pro	Thr		
Ser	Ser	Leu	Thr	Gln	Val	Val	His	Ser	Ala	Gly	Arg	Arg	Phe	Ile	Val	Ser	Ser	Leu	Thr	Gln	Val	Val	His	Ser	Ala	Gly	Arg	Arg	Phe	Ile	Val	Ser	Ser	Leu	Thr	Gln	Val	Val	His	Ser	Ala	Gly	Arg	Arg	Phe	Ile	Val		
Ser	Pro	Val	Pro	Glu	Ser	Arg	Leu	Arg	Glu	Ser	Lys	Val	Phe	Pro	Ser	Ser	Pro	Val	Pro	Glu	Ser	Arg	Leu	Arg	Glu	Ser	Lys	Val	Phe	Pro	Ser	Ser	Pro	Val	Pro	Glu	Ser	Arg	Leu	Arg	Glu	Ser	Lys	Val	Phe	Pro	Ser		
Glu	Ile	Thr	Asp	Thr	Val	Ala	Ala	Ser	Thr	Ala	Gln	Ser	Pro	Gly	Met	Glu	Ile	Thr	Asp	Thr	Val	Ala	Ala	Ser	Thr	Ala	Gln	Ser	Pro	Gly	Met	Glu	Ile	Thr	Asp	Thr	Val	Ala	Ala	Ser	Thr	Ala	Gln	Ser	Pro	Gly	Met		
1250																1250																	1250																
Asn	Leu	Ser	His	Ser	Ala	Ser	Ser	Leu	Ser	Leu	Gln	Gln	Ala	Phe	Ser	Asn	Leu	Ser	His	Ser	Ala	Ser	Ser	Leu	Ser	Leu	Gln	Gln	Ala	Phe	Ser	Asn	Leu	Ser	His	Ser	Ala	Ser	Ser	Leu	Ser	Leu	Gln	Gln	Ala	Phe	Ser		
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 Ser Gly Gln Gly Ser Ser Val Phe Thr Glu Ser Arg Val Ser Ser Gln
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 Thr Val Pro Gly His Ile Pro Ser Thr Val Gln Ala Gln Ser Gln Pro
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 His Gly Val Tyr Pro Pro Ser Ser Val Gln Gln Gly Ile Gln Gln Thr
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 Ala Pro Pro Gln Gln Thr Val Gln Tyr Ser Leu Ser Gln Thr Ser Thr

Ser Pro Val Pro Glu Ser Arg Leu Arg Glu Ser Lys Val Phe Pro Ser
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 Glu Ile Thr Asp Thr Val Ala Ala Ser Thr Ala Gln Ser Pro Gly Met
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 Glu Leu Arg Arg Ala Gln Met Thr Glu Gly Pro Asn Thr Ala Pro Pro
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 Asn Phe Ser His Thr Gly Pro Thr Phe Pro Val Val Pro Pro Phe Leu
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 Val Gly Ala Thr Leu Thr Ser Val Ser Thr Thr Thr Ser Phe Pro Ser
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 Ile Leu Pro Gln Ala Ala Gly Pro Thr Ser Thr Pro Leu Leu Pro Gln
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1730
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 1905 1910 1915 1920
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 Asp Lys Ile Thr Asp Thr Lys Lys Glu Gly Pro Val Ala Ser Pro Pro
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 Phe Met Asp Leu Glu Gln Ala Val Leu Pro Ala Val Ile Pro Lys Lys
 1955 1960 1965
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 1970 1975 1980
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<220>

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Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu	Lys	Gly	Leu	Gln
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Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu	Asp	Asp	Gly	Glu
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 Arg Val Ser Leu Ile Lys Arg Lys Arg Glu Gln Arg Gln Leu Val Arg
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<211> 6606

<212> DNA

<213> Homo sapiens

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 <212> PRT
 <213> Homo sapiens

<220>
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 <222> (1)...(2064)
 <223> Xaa = Any Amino Acid

<400> 26

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Gly	Arg	Thr	Glu	Glu	Tyr	Arg	Arg	Arg	His	Thr	Met	Asp	Lys	Asp	
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Gly	Leu	Pro	Leu	Ser	Leu	Pro	Gln	Pro	Ser	Ile	Pro	Ala	Ala	Val	Pro
		100						105					110		
Gln	Ser	Ala	Pro	Pro	Glu	Pro	His	Arg	Glu	Glu	Thr	Val	Thr	Ala	Thr
		115					120					125			
Ala	Thr	Ser	Gln	Val	Ala	Gln	Gln	Pro	Pro	Ala	Ala	Ala	Ala	Pro	Gly
	130					135						140			
Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val	Pro	Ser	Ser	Thr
	145				150				155						160
Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Leu	Val	Gly	Ser	Lys	Glu
			165					170					175		
Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly	Ser	Ala	Lys	Glu
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Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Gln	Asp	Asp	Ile	Glu	Glu	Leu	Glu
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Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe	Leu	Lys	Phe	Asp
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Ile	Glu	Ile	Gly	Arg	Gly	Ser	Phe	Lys	Thr	Val	Tyr	Lys	Gly	Leu	Asp
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Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu	Gln	Asp	Arg	Lys
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Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu	Ala	Glu	Met	Leu
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Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr	Asp	Ser	Trp	Glu
		275					280					285			
Ser	Thr	Val	Lys	Gly	Lys	Lys	Cys	Ile	Val	Leu	Val	Thr	Glu	Leu	Met
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Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe	Lys	Val	Met	Lys
	305				310					315				320	

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Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg	Asp	Leu	Lys	Cys	340	345	350
Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val	Lys	Ile	Gly	Asp	355	360	365
Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala	Lys	Ser	Val	Ile	370	375	380
Gly	Thr	Pro	Glu	Phe	Met	Ala	Pro	Glu	Met	Tyr	Glu	Glu	Lys	Tyr	Asp	385	390	400
Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met	Leu	Glu	Met	Ala	405	410	415
Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala	Ala	Gln	Ile	Tyr	420	425	430
Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe	Asp	Lys	Val	Ala	435	440	445
Ile	Pro	Glu	Val	Lys	Glu	Ile	Ile	Glu	Gly	Cys	Ile	Arg	Gln	Asn	Lys	450	455	460
Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His	Ala	Phe	Phe	Gln	465	470	475
Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu	Asp	Asp	Gly	Glu	485	490	495
Lys	Ile	Ala	Ile	Lys	Leu	Trp	Leu	Arg	Ile	Glu	Asp	Ile	Lys	Lys	Leu	500	505	510
Lys	Gly	Lys	Tyr	Lys	Asp	Asn	Glu	Ala	Ile	Glu	Phe	Ser	Phe	Asp	Leu	515	520	525
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Tyr	Val	Cys	Glu	Gly	Asp	His	Lys	Thr	Met	Ala	Lys	Ala	Ile	Lys	Asp	545	550	555
Arg	Val	Ser	Leu	Ile	Lys	Arg	Lys	Arg	Glu	Gln	Arg	Gln	Leu	Val	Arg	565	570	575
Glu	Glu	Gln	Glu	Lys	Lys	Lys	Gln	Glu	Glu	Ser	Ser	Leu	Lys	Gln	Gln	580	585	590
Val	Glu	Gln	Ser	Ser	Ala	Ser	Gln	Thr	Gly	Ile	Lys	Gln	Leu	Pro	Ser	595	600	605
Ala	Ser	Thr	Gly	Ile	Pro	Thr	Ala	Ser	Thr	Thr	Ser	Ala	Ser	Val	Ser	610	615	620
Thr	Gln	Val	Glu	Pro	Glu	Glu	Pro	Glu	Ala	Asp	Gln	His	Gln	Gln	Leu	625	630	635
Gln	Tyr	Gln	Gln	Pro	Ser	Ile	Ser	Val	Leu	Ser	Asp	Gly	Thr	Val	Asp	645	650	655
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Gln	Thr	Val	Ser	Tyr	Gly	Ser	Gln	His	Glu	Gln	Ala	His	Ser	Thr	Gly	675	680	685
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His	Gly	Val	Tyr	Pro	Pro	Ser	Ser	Val	Gln	Gln	Gly	Ile	Gln	Gln	Thr	705	710	715
Ala	Pro	Pro	Gln	Gln	Thr	Val	Gln	Tyr	Ser	Leu	Ser	Gln	Thr	Ser	Thr	725	730	735
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Gln	Val	Leu	Pro	Gln	Val	Ser	Ala	Gly	Lys	Gln	Gly	Phe	Pro	Pro	Arg	755	760	765
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Tyr	Val	Glu	Ser	Asn	Leu	Leu	Val	Pro	Met	Gly	Gly	Val	Gly	Gly	Gln			

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 Ala His Ser Leu Asp Lys Thr Ser His Ser Ser Thr Thr Gly Leu Ala
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 Phe Ser Leu Ser Ala Pro Ser Ser Ser Ser Pro Gly Ala Gly Val
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 Pro Val Ala Asn Val Pro Ala Val Gln Gln Thr Leu Ile His Ser Gln
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Ser Arg Gly Ala Ala Ala Thr Thr Thr Thr Thr Glu His Arg Phe Phe
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Arg Arg Ser Val Ile Cys Asp Ser Asn Ala Thr Ala Leu Glu Leu Pro
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Gly Leu Pro Leu Ser Leu Pro Gln Pro Ser Ile Pro Ala Ala Val Pro
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Gln Ser Ala Pro Pro Glu Pro His Arg Glu Glu Thr Val Thr Ala Thr
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Glu Gln Ala Val Ala Gly Pro Ala Pro Ser Thr Val Pro Ser Ser Thr
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Ser Lys Asp Arg Pro Val Ser Gln Pro Ser Ser Leu Val Gly Ser Lys Glu
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Arg Leu Arg Glu Ser Lys Val	Phe Pro Ser Glu Ile Thr Asp Thr	Val			
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Val Val Ser Ala His Ser Leu	Asp Lys Thr Ser His Ser Ser Thr Thr				
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Ala Ala Val Pro Gln Ser Ala Pro Pro Glu Pro His Arg Glu Glu Thr
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Val Thr Ala Thr Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala
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Pro Ser Ser Thr Ser Lys Asp Arg Pro Val Ser Gln Pro Ser Leu Val
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Val Thr Ala	Thr Ala Thr Ser Gln Val Ala Gln	Gln Pro Pro Ala Ala	
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Ala Ala Pro	Gly Glu Gln Ala Val Ala Gly	Pro Ala Pro Ser Thr Val	
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Pro Ser Ser	Thr Ser Lys Asp Arg Pro Val Ser	Gln Pro Ser Leu Val	
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Gly Ser Lys	Glu Glu Pro Pro Ala Arg Ser Gly	Ser Gly Gly Gly	
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Ser Ala Lys	Glu Pro Gln Glu Glu Arg Ser Gln	Gln Gln Asp Asp Ile	
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Glu Glu Leu	Glu Thr Lys Ala Val Gly Met Ser	Asn Asp Gly Arg Phe	
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Leu Lys Phe	Asp Ile Glu Ile Gly Arg Gly Ser	Phe Lys Thr Val Tyr	
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Lys Gly Leu	Asp Thr Glu Thr Thr Val Glu Val	Ala Trp Cys Glu Leu	
	180	185	190
Gln Asp Arg	Lys Lys Leu Thr Lys Ser Glu Arg	Gln Arg Phe Lys Glu Glu	
	195	200	205
Ala Glu Met	Leu Lys Gly Leu Gln His Pro Asn	Ile Val Arg Phe Tyr	
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Asp Ser Trp	Glu Ser Thr Val Lys Gly Lys Lys	Cys Ile Val Leu Val	
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Thr Glu Leu	Met Thr Ser Gly Thr Leu Lys Thr	Tyr Leu Lys Arg Phe	
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Ala Ile Lys	Asp Arg Val Ser Leu Ile Lys Arg	Lys Arg Glu Gln Arg	
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Val Glu Cys Gln Leu Glu Thr His Asn Arg Lys Met Val Thr Phe Lys		1070
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Phe Asp Leu Asp Gly Asp Asn Pro Glu Glu Ile Ala Thr Ile Met Val		1085
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		1520

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 Gly Ser Lys Glu Glu Pro Pro Pro Ala Arg Ser Gly Ser Gly Gly Gly
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 Lys Gly Leu Asp Thr Glu Thr Thr Val Glu Val Ala Trp Cys Glu Leu
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 Gln Asp Arg Lys Leu Thr Lys Ser Glu Arg Gln Arg Phe Lys Glu Glu
 195 200 205
 Ala Glu Met Leu Lys Gly Leu Gln His Pro Asn Ile Val Arg Phe Tyr
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 Asp Ser Trp Glu Ser Thr Val Lys Gly Lys Lys Cys Ile Val Leu Val
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 Thr Glu Leu Met Thr Ser Gly Thr Leu Lys Thr Tyr Leu Lys Arg Phe
 245 250 255
 Lys Val Met Lys Ile Lys Val Leu Arg Ser Trp Cys Arg Gln Ile Leu
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 Lys Gly Leu Gln Phe Leu His Thr Arg Thr Pro Pro Ile Ile His Arg
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 Asp Leu Lys Cys Asp Asn Ile Phe Ile Thr Gly Pro Thr Gly Ser Val
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 Lys Ile Gly Asp Leu Gly Leu Ala Thr Leu Lys Arg Ala Ser Phe Ala

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Ser	Phe	Asp	Leu	Glu	Arg	Asp	Val	Pro	Glu	Asp	Val	Ala	Gln	Glu	Met
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Val	Glu	Ser	Gly	Tyr	Val	Cys	Glu	Gly	Asp	His	Lys	Thr	Met	Ala	Lys
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 835 840 845
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 850 855 860
 Pro Ala Asn Leu Gly Gln Ala Ala Glu Val Pro Leu Ser Ser Gly Asp
 865 870 875
 Val Leu Tyr Gln Gly Phe Pro Pro Arg Leu Pro Pro Gln Tyr Pro Gly
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 50 55 60
 Val Thr Ala Thr Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala
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 Ala Ala Pro Gly Glu Gln Ala Val Ala Gly Pro Ala Pro Ser Thr Val
 85 90 95
 Pro Ser Ser Thr Ser Lys Asp Arg Pro Val Ser Gln Pro Ser Leu Val
 100 105 110
 Gly Ser Lys Glu Glu Pro Pro Ala Arg Ser Gly Ser Gly Gly Gly
 115 120 125
 Ser Ala Lys Glu Pro Gln Glu Glu Arg Ser Gln Gln Gln Asp Asp Ile
 130 135 140
 Glu Glu Leu Glu Thr Lys Ala Val Gly Met Ser Asn Asp Gly Arg Phe
 145 150 155 160
 Leu Lys Phe Asp Ile Glu Ile Gly Arg Gly Ser Phe Lys Thr Val Tyr
 165 170 175
 Lys Gly Leu Asp Thr Glu Thr Thr Val Glu Val Ala Trp Cys Glu Leu
 180 185 190
 Gln Asp Arg Lys Leu Thr Lys Ser Glu Arg Gln Arg Phe Lys Glu Glu
 195 200 205
 Ala Glu Met Leu Lys Gly Leu Gln His Pro Asn Ile Val Arg Phe Tyr
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 Asp Ser Trp Glu Ser Thr Val Lys Gly Lys Lys Cys Ile Val Leu Val
 225 230 235 240
 Thr Glu Leu Met Thr Ser Gly Thr Leu Lys Thr Tyr Leu Lys Arg Phe
 245 250 255
 Lys Val Met Lys Ile Lys Val Leu Arg Ser Trp Cys Arg Gln Ile Leu
 260 265 270
 Lys Gly Leu Gln Phe Leu His Thr Arg Thr Pro Pro Ile Ile His Arg
 275 280 285
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 1890 1895 1900
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 1905 1910 1915 1920
 Lys Ser Ser Arg Ser Ser Ser Ser Leu Gly Asn Lys Ser Pro Gln Leu Ser
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 35 40 45
 Ala Ala Val Pro Gln Ser Ala Pro Pro Glu Pro His Arg Glu Glu Thr
 50 55 60
 Val Thr Ala Thr Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala
 65 70 75 80
 Ala Ala Pro Gly Glu Gln Ala Val Ala Gly Pro Ala Pro Ser Thr Val
 85 90 95
 Pro Ser Ser Thr Ser Lys Asp Arg Pro Val Ser Gln Pro Ser Leu Val
 100 105 110
 Gly Ser Lys Glu Glu Pro Pro Pro Ala Arg Ser Gly Ser Gly Gly Gly
 115 120 125
 Ser Ala Lys Glu Pro Gln Glu Glu Arg Ser Gln Gln Gln Asp Asp Ile
 130 135 140
 Glu Glu Leu Glu Thr Lys Ala Val Gly Met Ser Asn Asp Gly Arg Phe
 145 150 155 160
 Leu Lys Phe Asp Ile Glu Ile Gly Arg Gly Ser Phe Lys Thr Val Tyr
 165 170 175
 Lys Gly Leu Asp Thr Glu Thr Thr Val Glu Val Ala Trp Cys Glu Leu
 180 185 190
 Gln Asp Arg Lys Leu Thr Lys Ser Glu Arg Gln Arg Phe Lys Glu Glu
 195 200 205
 Ala Glu Met Leu Lys Gly Leu Gln His Pro Asn Ile Val Arg Phe Tyr
 210 215 220

Asp	Ser	Trp	Glu	Ser	Thr	Val	Lys	Gly	Lys	Lys	Cys	Ile	Val	Leu	Val
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Thr	Glu	Leu	Met	Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe
			245						250					255	
Lys	Val	Met	Lys	Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu
			260						265				270		
Lys	Gly	Leu	Gln	Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg
		275					280					285			
Asp	Leu	Lys	Cys	Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val
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Lys	Ile	Gly	Asp	Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala
305				310						315				320	
Lys	Ser	Val	Ile	Gly	Thr	Pro	Glu	Phe	Met	Ala	Pro	Glu	Met	Tyr	Glu
			325						330					335	
Glu	Lys	Tyr	Asp	Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met
		340					345						350		
Leu	Glu	Met	Ala	Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala
		355					360					365			
Ala	Gln	Ile	Tyr	Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe
	370					375					380				
Asp	Lys	Val	Ala	Ile	Pro	Glu	Val	Lys	Glu	Ile	Ile	Glu	Gly	Cys	Ile
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Arg	Gln	Asn	Lys	Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His
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Ala	Phe	Phe	Gln	Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu
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Ile	Lys	Lys	Leu	Lys	Gly	Lys	Tyr	Lys	Asp	Asn	Glu	Ala	Ile	Glu	Phe
	450				455						460				
Ser	Phe	Asp	Leu	Glu	Arg	Asp	Val	Pro	Glu	Asp	Val	Ala	Gln	Glu	Met
465				470						475				480	
Val	Glu	Ser	Gly	Tyr	Val	Cys	Glu	Gly	Asp	His	Lys	Thr	Met	Ala	Lys
			485						490				495		
Ala	Ile	Lys	Asp	Arg	Val	Ser	Leu	Ile	Lys	Arg	Lys	Arg	Glu	Gln	Arg
		500						505					510		
Gln	Leu	Val	Arg	Glu	Glu	Gln	Glu	Lys	Lys	Lys	Gln	Glu	Glu	Ser	Ser
		515					520					525			
Leu	Lys	Gln	Gln	Val	Glu	Gln	Ser	Ser	Ala	Ser	Gln	Thr	Gly	Ile	Lys
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Gln	Leu	Pro	Ser	Ala	Ser	Thr	Gly	Ile	Pro	Thr	Ala	Ser	Thr	Thr	Ser
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His	Gln	Gln	Leu	Gln	Tyr	Gln	Gln	Pro	Ser	Ile	Ser	Val	Leu	Ser	Asp
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Val	Ser	Ser	Gln	Gln	Thr	Val	Ser	Tyr	Gly	Ser	Gln	His	Glu	Gln	Ala
	610					615					620				
His	Ser	Thr	Gly	Thr	Val	Pro	Gly	His	Ile	Pro	Ser	Thr	Val	Gln	Ala
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Ser	Gln	Pro	Ile	Gln	His	Pro	Gln	Gln	Gln	Gln	Gly	Ile	Gln	Gln	Thr
		675					680					685			
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	690					695					700				
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Gln	Val	Leu	Pro	Gln	Val	Ser	Ala	Gly	Lys	Gln	Gly	Phe	Pro	Pro	Arg

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 Gly Ser Thr Ala Thr Pro Gly Pro Lys Pro Pro Ala Val Val Ser Gln
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 Gln Ala Ala Gly Ser Thr Thr Val Gly Ala Thr Leu Thr Ser Val Ser
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 Thr Thr Thr Ser Phe Pro Ser Thr Ala Ser Gln Leu Ser Ile Gln Leu
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 Ser Ser Ser Thr Ser Thr Pro Thr Leu Ala Glu Thr Val Val Val Ser
 1300 1305 1310
 Ala His Ser Leu Asp Lys Thr Ser His Ser Ser Thr Thr Gly Leu Ala
 1315 1320 1325
 Phe Ser Leu Ser Ala Pro Ser Ser Ser Ser Pro Gly Ala Gly Val
 1330 1335 1340
 Ser Ser Tyr Ile Ser Gln Pro Gly Gly Leu His Pro Leu Val Ile Pro
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 Ser Val Ile Ala Ser Thr Pro Ile Leu Pro Gln Ala Ala Gly Pro Thr
 1365 1370 1375
 Ser Thr Pro Leu Leu Pro Gln Val Pro Ser Ile Pro Pro Leu Val Gln
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 1425 1430 1435 1440
 Thr Leu Glu Glu Lys Leu Arg Ser Leu Phe Ser Glu His Ser Ser Ser
 1445 1450 1455
 Gly Ala Gln His Ala Ser Val Ser Leu Glu Thr Ser Leu Val Ile Glu
 1460 1465 1470
 Ser Thr Val Thr Pro Gly Ile Pro Thr Thr Ala Val Ala Pro Ser Lys
 1475 1480 1485
 Leu Leu Thr Ser Thr Thr Ser Thr Cys Leu Pro Pro Thr Asn Leu Pro
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 Gly Thr Gln Pro Gln Lys Gly Val Ser Gln Val Lys Glu Gly Pro Val
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 Leu Ala Thr Ser Ser Gly Ala Gly Val Phe Lys Met Gly Arg Phe Gln
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 1650 1655 1660
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 1665 1670 1675 1680
 Val Leu Ser Ser Ser Ser Pro Glu Ser Thr Leu Val Lys Pro Glu Pro
 1685 1690 1695
 Asn Gly Ile Thr Ile Pro Gly Ile Ser Ser Asp Val Pro Glu Ser Ala
 1700 1705 1710
 His Lys Thr Thr Ala Ser Glu Ala Lys Ser Asp Thr Gly Gln Pro Thr
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 Lys Val Gly Arg Phe Gln Val Thr Thr Ala Asn Lys Val Gly Arg

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<220>
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 35 40 45
 Ala Ala Val Pro Gln Ser Ala Pro Pro Glu Pro His Arg Glu Glu Thr
 50 55 60
 Val Thr Ala Thr Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala
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 85 90 95
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 100 105 110
 Gly Ser Lys Glu Glu Pro Pro Pro Ala Arg Ser Gly Ser Gly Gly Gly
 115 120 125
 Ser Ala Lys Glu Pro Gln Glu Glu Arg Ser Gln Gln Gln Asp Asp Ile
 130 135 140
 Glu Glu Leu Glu Thr Lys Ala Val Gly Met Ser Asn Asp Gly Arg Phe
 145 150 155 160
 Leu Lys Phe Asp Ile Glu Ile Gly Arg Gly Ser Phe Lys Thr Val Tyr
 165 170 175
 Lys Gly Leu Asp Thr Glu Thr Thr Val Glu Val Ala Trp Cys Glu Leu
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 Gln Asp Arg Lys Leu Thr Lys Ser Glu Arg Gln Arg Phe Lys Glu Glu
 195 200 205
 Ala Glu Met Leu Lys Gly Leu Gln His Pro Asn Ile Val Arg Phe Tyr
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 Asp Ser Trp Glu Ser Thr Val Lys Gly Lys Lys Cys Ile Val Leu Val
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 Pro Gln Gln Thr Leu His Pro Pro Gly Asn Ile Pro Glu Ser Gly Gln
 1860 1865 1870
 Asn Gln Leu Leu Gln Pro Leu Lys Pro Ser Pro Ser Ser Asp Asn Leu
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 Tyr Ser Ala Phe Thr Ser Asp Gly Ala Ile Ser Val Pro Ser Leu Ser
 1890 1895 1900
 Ala Pro Gly Gln Gly Thr Ser Ser Thr Asn Thr Val Gly Ala Thr Val
 1905 1910 1915 1920
 Asn Ser Gln Ala Ala Gln Ala Gln Pro Pro Ala Met Thr Ser Ser Arg
 1925 1930 1935
 Lys Gly Thr Phe Thr Asp Asp Leu His Lys Leu Val Asp Asn Trp Ala
 1940 1945 1950
 Arg Asp Ala Met Asn Leu Ser Gly Arg Arg Gly Ser Lys Gly His Met
 1955 1960 1965
 Asn Tyr Glu Gly Pro Gly Met Ala Arg Lys Phe Ser Ala Pro Gly Gln
 1970 1975 1980
 Leu Cys Ile Ser Met Thr Ser Asn Leu Gly Gly Ser Ala Pro Ile Ser

1985		1990		1995		2000
Ala Ala Ser	Ala Thr Ser Leu Gly His	Phe Thr Lys Ser Met Cys Pro				
	2005	2010				
Pro Gln Gln Tyr Gly Phe Pro Ala Thr Pro Phe Gly Ala Gln Trp Ser						
	2020	2025				
Gly Thr Gly Gly Pro Ala Pro Gln Pro Leu Gly Gln Phe Gln Pro Val						
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Gly Thr Ala Ser Leu Gln Asn Phe Asn Ile Ser Asn Leu Gln Lys Ser						
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<220>
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Pro	Ser	Ser	Thr	Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Leu	Val
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Glu	Glu	Leu	Glu	Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe
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Lys	Gly	Leu	Asp	Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu
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Gln	Asp	Arg	Lys	Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu
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Arg	Gln	Asn	Lys	Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His
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Ala	Phe	Phe	Gln	Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu
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Ile	Lys	Lys	Leu	Lys	Gly	Lys	Tyr	Lys	Asp	Asn	Glu	Ala	Ile	Glu	Phe
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Ala	Pro	Pro	Gln	Gln	Thr	Val	Gln	Tyr	Ser	Leu	Ser	Gln	Thr	Ser	Thr			
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Thr	Gln	Pro	Thr	Thr	Leu	Ala	Ser	Ser	Val	Asp	Ser	Ala	His	Ser	Asp			
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 1985 1990 1995 2000
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 2005 2010 2015
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 Thr Ala Pro Pro Asn Phe Ser His Thr Gly Pro Thr Phe Pro Val Val
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 Pro Pro Phe Leu Ser Ser Ile Ala Gly Val Pro Thr Thr Ala Ala Ala
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 Val Pro Thr Ser Thr Ser Glu Ile Val Val Ser Ser Thr Ala Leu Tyr
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 Ser Ala Pro Ser Ser Ser Ser Ser Pro Gly Ala Gly Val Ser Ser Tyr
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Pro Val Ser Met Ala	Ala Pro Thr Ala Ile Thr Glu Ala Gly Thr Gln	
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Pro Gln Lys Gly Val Ser	Gln Val Lys Glu Gly Pro Val Leu Ala Thr	
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Thr Ala Ser Glu Ala Lys	Ser Asp Thr Gly Gln Pro Thr Lys Val Gly	
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Ala Ser Pro Pro Phe Met	Asp Leu Glu Gln Ala Val Leu Pro Ala Val	
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Gly Pro Ser Ser Asp Pro	Glu Ala Ala Phe Leu Ser Arg Asp Val Asp	
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Leu Pro Ser Gln Asn Leu Ser	Gln Ser Leu Ser Asn Ser Phe Asn Ser	
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Ser Tyr Met Ser Ser Asp	Asn Glu Ser Asp Ile Glu Asp Glu Asp Leu	
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Lys Leu Glu Leu Arg Arg	Leu Arg Asp Lys His Leu Lys Glu Ile Gln	
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Asp Leu Gln Ser Arg Gln	Lys His Glu Ile Glu Ser Leu Tyr Thr Lys	
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Ser Gly Arg Arg Arg Arg	Pro Thr Lys Ser Lys Gly Ser Lys Ser Ser	
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Ser Gly Gln Ser Ala Ala	Ser Val Leu His Pro Gln Gln Thr Leu His	
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Ala Ala Val Pro Gln Ser Ala Pro Pro Glu Pro His Arg Glu Glu Thr
50 55 60
Val Thr Ala Thr Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala
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85 90 95
Pro Ser Ser Thr Ser Lys Asp Arg Pro Val Ser Gln Pro Ser Leu Val
100 105 110
Gly Ser Lys Glu Glu Pro Pro Pro Ala Arg Ser Gly Ser Gly Gly Gly
115 120 125
Ser Ala Lys Glu Pro Gln Glu Glu Arg Ser Gln Gln Asp Asp Ile
130 135 140
Glu Glu Leu Glu Thr Lys Lys Ala Val Gly Met Ser Asn Asp Gly Arg Phe
145 150 155 160
Leu Lys Phe Asp Ile Glu Ile Gly Arg Gly Ser Phe Lys Thr Val Tyr
165 170 175
Lys Gly Leu Asp Thr Glu Thr Thr Val Glu Val Ala Trp Cys Glu Leu
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Gln Asp Arg Lys Leu Thr Lys Ser Glu Arg Gln Arg Phe Lys Glu Glu
195 200 205
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225 230 235 240
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260 265 270
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275 280 285
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290 295 300
Lys Ile Gly Asp Leu Gly Leu Ala Thr Leu Lys Arg Ala Ser Phe Ala
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 <212> PRT
 <213> Homo sapiens
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 <222> (1)...(2141)
 <223> Xaa = Any Amino Acid

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 Ala Ala Val Pro Gln Ser Ala Pro Pro Glu Pro His Arg Glu Glu Thr
 50 55 60
 Val Thr Ala Thr Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala
 65 70 75 80
 Ala Ala Pro Gly Glu Gln Ala Val Ala Gly Pro Ala Pro Ser Thr Val

Gly	Thr	Val	Asp	Ser	Gly	Gln	Gly	Ser	Ser	Val	Phe	Thr	Glu	Ser	Arg
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Val	Ser	Ser	Gln	Gln	Thr	Val	Ser	Tyr	Gly	Ser	Gln	His	Glu	Gln	Ala
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His	Ser	Thr	Gly	Thr	Val	Pro	Gly	His	Ile	Pro	Ser	Thr	Val	Gln	Ala
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Gln	Ser	Gln	Pro	His	Gly	Val	Tyr	Pro	Pro	Ser	Ser	Val	Gln	Gln	Gly
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Ile	Gln	Gln	Thr	Ala	Pro	Pro	Gln	Gln	Thr	Val	Gln	Tyr	Ser	Leu	Ser
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Gln	Thr	Ser	Thr	Ser	Ser	Glu	Ala	Thr	Thr	Ala	Gln	Pro	Val	Ser	Gln
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Phe	Pro	Pro	Arg	Leu	Pro	Pro	Gln	Tyr	Pro	Gly	Asp	Ser	Asn	Ile	Ala
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Pro	Ser	Ser	Asn	Val	Ala	Ser	Val	Cys	Ile	His	Ser	Thr	Val	Leu	Xaa
			725						730						735
Pro	Pro	Met	Pro	Thr	Glu	Val	Leu	Ala	Thr	Pro	Gly	Tyr	Phe	Pro	Thr
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Val	Val	Gln	Pro	Tyr	Val	Glu	Ser	Asn	Leu	Leu	Val	Pro	Met	Gly	Gly
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Val	Ser	Gln	Val	Ala	Pro	Ala	Glu	Pro	Val	Ala	Val	Ala	Gln	Pro	Gln
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Ala	Thr	Gln	Pro	Thr	Thr	Leu	Ala	Ser	Ser	Val	Asp	Ser	Ala	His	Ser
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Asp	Val	Ala	Ser	Gly	Met	Ser	Asp	Gly	Asn	Glu	Asn	Val	Pro	Ser	Ser
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Ser	Gly	Arg	His	Glu	Gly	Arg	Thr	Thr	Lys	Arg	His	Tyr	Arg	Lys	Ser
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Val	Arg	Ser	Arg	Ser	Arg	His	Glu	Lys	Thr	Ser	Arg	Pro	Lys	Leu	Arg
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Ile	Leu	Asn	Val	Ser	Asn	Lys	Gly	Asp	Arg	Val	Val	Glu	Cys	Gln	Leu
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Ala	Ser	Ser	Leu	Ser	Leu	Gln	Gln	Ala	Phe	Ser	Glu	Leu	Arg	Arg	Ala
		1060						1065					1070		
Gln	Met	Thr	Glu	Gly	Pro	Asn	Thr	Ala	Pro	Pro	Asn	Phe	Ser	His	Thr
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Gly	Pro	Thr	Phe	Pro	Val	Val	Pro	Pro	Phe	Leu	Ser	Ser	Ile	Ala	Gly

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1125	1130	1135
Pro Thr Glu Glu Gly Ile Ala	Gly Val Ala Thr Ser Thr	Gly Val Val
1140	1145	1150
Thr Ser Gly Gly Leu Pro Ile	Pro Pro Val Ser Glu Ser	Pro Val Leu
1155	1160	1165
Ser Ser Val Val Ser Ser Ile	Thr Ile Pro Ala Val Val	Ser Ile Ser
1170	1175	1180
Thr Thr Ser Pro Ser Leu	Gln Val Pro Thr Ser Thr	Ser Glu Ile Val
1185	1190	1195
Val Ser Ser Thr Ala Leu	Tyr Pro Ser Val Thr Val	Ser Ala Thr Ser
1205	1210	1215
Ala Ser Ala Gly Gly Ser Thr	Ala Thr Pro Gly Pro Lys	Pro Pro Ala
1220	1225	1230
Val Val Ser Gln Gln Ala Ala	Gly Ser Thr Thr Val Gly	Ala Thr Leu
1235	1240	1245
Thr Ser Val Ser Thr Thr Thr	Ser Phe Pro Ser Thr Ala	Ser Gln Leu
1250	1255	1260
Ser Ile Gln Leu Ser Ser Ser	Thr Ser Thr Pro Thr Leu	Ala Glu Thr
1265	1270	1275
Val Val Val Ser Ala His	Ser Leu Asp Lys Thr Ser	His Ser Ser Thr
1285	1290	1295
Thr Gly Leu Ala Phe Ser Leu	Ser Ala Pro Ser Ser Ser	Ser Ser Pro
1300	1305	1310
Gly Ala Gly Val Ser Ser Tyr	Ile Ser Gln Pro Gly Gly	Leu His Pro
1315	1320	1325
Leu Val Ile Pro Ser Val Ile	Ala Ser Thr Pro Ile Leu	Pro Gln Ala
1330	1335	1340
Ala Gly Pro Thr Ser Thr Pro	Leu Leu Pro Gln Val Pro	Ser Ile Pro
1345	1350	1355
Pro Leu Val Gln Pro Val Ala	Asn Val Pro Ala Val Gln	Gln Thr Leu
1365	1370	1375
Ile His Ser Gln Pro Gln Pro	Ala Leu Leu Pro Asn Gln	Pro His Thr
1380	1385	1390
His Cys Pro Glu Val Asp Ser	Asp Thr Gln Pro Lys Ala	Pro Gly Ile
1395	1400	1405
Asp Asp Ile Lys Thr Leu Glu	Glu Lys Leu Arg Ser Leu	Phe Ser Glu
1410	1415	1420
His Ser Ser Ser Gly Ala Gln	His Ala Ser Val Ser Leu	Glu Thr Ser
1425	1430	1435
Leu Val Ile Glu Ser Thr Val	Thr Pro Gly Ile Pro Thr	Thr Ala Val
1445	1450	1455
Ala Pro Ser Lys Leu Leu Thr	Ser Thr Thr Ser Thr Cys	Leu Pro Pro
1460	1465	1470
Thr Asn Leu Pro Leu Gly Thr	Val Ala Leu Pro Val Thr	Pro Val Val
1475	1480	1485
Thr Pro Gly Gln Val Ser Thr	Pro Val Ser Thr Thr Thr	Ser Gly Val
1490	1495	1500
Lys Pro Gly Thr Ala Pro Ser	Lys Pro Pro Leu Thr Lys	Ala Pro Val
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Leu Pro Val Gly Thr Glu Leu	Pro Ala Gly Thr Leu Pro	Ser Glu Gln
1525	1530	1535
Leu Pro Pro Phe Pro Gly Pro	Ser Leu Thr Gln Ser Gln	Gln Pro Leu
1540	1545	1550
Glu Asp Leu Asp Ala Gln Leu	Arg Arg Thr Leu Ser Pro	Glu Xaa Ile
1555	1560	1565
Thr Val Thr Ser Ala Val Gly	Pro Val Ser Met Ala Ala	Pro Thr Ala
1570	1575	1580
Ile Thr Glu Ala Gly Thr Gln	Pro Gln Lys Gly Val Ser	Gln Val Lys
1585	1590	1595
		1600

Glu Gly Pro Val Leu Ala Thr Ser Ser Gly Ala Gly Val Phe Lys Met
 1605 1610 1615
 Gly Arg Phe Gln Val Ser Val Ala Ala Asp Gly Ala Gln Lys Glu Gly
 1620 1625 1630
 Lys Asn Lys Ser Glu Asp Ala Lys Ser Val His Phe Glu Ser Ser Thr
 1635 1640 1645
 Ser Glu Ser Ser Val Leu Ser Ser Ser Ser Pro Glu Ser Thr Leu Val
 1650 1655 1660
 Lys Pro Glu Pro Asn Gly Ile Thr Ile Pro Gly Ile Ser Ser Asp Val
 1665 1670 1675 1680
 Pro Glu Ser Ala His Lys Thr Thr Ala Ser Glu Ala Lys Ser Asp Thr
 1685 1690 1695
 Gly Gln Pro Thr Lys Val Gly Arg Phe Gln Val Thr Thr Thr Ala Asn
 1700 1705 1710
 Lys Val Gly Arg Phe Ser Val Ser Lys Thr Glu Asp Lys Ile Thr Asp
 1715 1720 1725
 Thr Lys Lys Glu Gly Pro Val Ala Ser Pro Pro Phe Met Asp Leu Glu
 1730 1735 1740
 Gln Ala Val Leu Pro Ala Val Ile Pro Lys Lys Glu Lys Pro Glu Leu
 1745 1750 1755 1760
 Ser Glu Pro Ser His Leu Asn Gly Pro Ser Ser Asp Pro Glu Ala Ala
 1765 1770 1775
 Phe Leu Ser Arg Asp Val Asp Asp Gly Ser Gly Ser Pro His Ser Pro
 1780 1785 1790
 His Gln Leu Ser Ser Lys Ser Leu Pro Ser Gln Asn Leu Ser Gln Ser
 1795 1800 1805
 Leu Ser Asn Ser Phe Asn Ser Ser Tyr Met Ser Ser Asp Asn Glu Ser
 1810 1815 1820
 Asp Ile Glu Asp Glu Asp Leu Lys Leu Glu Leu Arg Arg Leu Arg Asp
 1825 1830 1835 1840
 Lys His Leu Lys Glu Ile Gln Asp Leu Gln Ser Arg Gln Lys His Glu
 1845 1850 1855
 Ile Glu Ser Leu Tyr Thr Lys Leu Gly Lys Val Pro Pro Ala Val Ile
 1860 1865 1870
 Ile Pro Pro Ala Ala Pro Leu Ser Gly Arg Arg Arg Arg Pro Thr Lys
 1875 1880 1885
 Ser Lys Gly Ser Lys Ser Ser Arg Ser Ser Ser Leu Gly Asn Lys Ser
 1890 1895 1900
 Pro Gln Leu Ser Gly Asn Leu Ser Gly Gln Ser Ala Ala Ser Val Leu
 1905 1910 1915 1920
 His Pro Gln Gln Thr Leu His Pro Pro Gly Asn Ile Pro Glu Ser Gly
 1925 1930 1935
 Gln Asn Gln Leu Leu Gln Pro Leu Lys Pro Ser Pro Ser Ser Asp Asn
 1940 1945 1950
 Leu Tyr Ser Ala Phe Thr Ser Asp Gly Ala Ile Ser Val Pro Ser Leu
 1955 1960 1965
 Ser Ala Pro Gly Gln Gly Thr Ser Ser Thr Asn Thr Val Gly Ala Thr
 1970 1975 1980
 Val Asn Ser Gln Ala Ala Gln Ala Gln Pro Pro Ala Met Thr Ser Ser
 1985 1990 1995 2000
 Arg Lys Gly Thr Phe Thr Asp Asp Leu His Lys Leu Val Asp Asn Trp
 2005 2010 2015
 Ala Arg Asp Ala Met Asn Leu Ser Gly Arg Arg Gly Ser Lys Gly His
 2020 2025 2030
 Met Asn Tyr Glu Gly Pro Gly Met Ala Arg Lys Phe Ser Ala Pro Gly
 2035 2040 2045
 Gln Leu Cys Ile Ser Met Thr Ser Asn Leu Gly Gly Ser Ala Pro Ile
 2050 2055 2060
 Ser Ala Ala Ser Ala Thr Ser Leu Gly His Phe Thr Lys Ser Met Cys
 2065 2070 2075 2080
 Pro Pro Gln Gln Tyr Gly Phe Pro Ala Thr Pro Phe Gly Ala Gln Trp
 2085 2090 2095
 Ser Gly Thr Gly Gly Pro Ala Pro Gln Pro Leu Gly Gln Phe Gln Pro

2100 2105 2110
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2130 2135 2140

<210> 57
<211> 6015
<212> DNA
<213> Homo sapiens

<400> 57
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<210> 58
 <211> 2004
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> VARIANT
 <222> (1)...(2004)
 <223> Xaa = Any Amino Acid

<400> 58

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			20					25					30		
Leu	Glu	Leu	Pro	Gly	Leu	Pro	Leu	Ser	Leu	Pro	Gln	Pro	Ser	Ile	Pro
		35					40					45			
Ala	Ala	Val	Pro	Gln	Ser	Ala	Pro	Pro	Glu	Pro	His	Arg	Glu	Glu	Thr
	50					55					60				
Val	Thr	Ala	Thr	Ala	Thr	Ser	Gln	Val	Ala	Gln	Gln	Pro	Pro	Ala	Ala
	65					70				75					80
Ala	Ala	Pro	Gly	Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val
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Pro	Ser	Ser	Thr	Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Leu	Val
			100					105					110		
Gly	Ser	Lys	Glu	Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly
		115					120					125			
Ser	Ala	Lys	Glu	Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Gln	Asp	Asp	Ile
	130					135						140			
Glu	Glu	Leu	Glu	Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe
	145					150				155					160
Leu	Lys	Phe	Asp	Ile	Glu	Ile	Gly	Arg	Gly	Ser	Phe	Lys	Thr	Val	Tyr
				165					170					175	
Lys	Gly	Leu	Asp	Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu
			180					185					190		
Gln	Asp	Arg	Lys	Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu
		195					200					205			
Ala	Glu	Met	Leu	Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr
	210					215					220				
Asp	Ser	Trp	Glu	Ser	Thr	Val	Lys	Gly	Lys	Lys	Cys	Ile	Val	Leu	Val
	225					230				235					240
Thr	Glu	Leu	Met	Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe
				245					250					255	
Lys	Val	Met	Lys	Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu
		260						265					270		
Lys	Gly	Leu	Gln	Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg
		275				280						285			
Asp	Leu	Lys	Cys	Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val
	290					295					300				
Lys	Ile	Gly	Asp	Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala
	305					310				315					320
Lys	Ser	Val	Ile	Gly	Thr	Pro	Glu	Phe	Met	Ala	Pro	Glu	Met	Tyr	Glu
			325						330					335	
Glu	Lys	Tyr	Asp	Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met
		340						345					350		
Leu	Glu	Met	Ala	Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala
		355					360					365			
Ala	Gln	Ile	Tyr	Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe
	370					375					380				
Asp	Lys	Val	Ala	Ile	Pro	Glu	Val	Lys	Glu	Ile	Ile	Glu	Gly	Cys	Ile
	385				390					395					400
Arg	Gln	Asn	Lys	Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His
			405						410					415	
Ala	Phe	Phe	Gln	Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu
			420					425					430		
Asp	Asp	Gly	Glu	Lys	Ile	Ala	Ile	Lys	Leu	Trp	Leu	Arg	Ile	Glu	Asp
		435					440					445			
Ile	Lys	Lys	Leu	Lys	Gly	Lys	Tyr	Lys	Asp	Asn	Glu	Ala	Ile	Glu	Phe
	450					455					460				
Ser	Phe	Asp	Leu	Glu	Arg	Asp	Val	Pro	Glu	Asp	Val	Ala	Gln	Glu	Met
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Val	Glu	Ser	Gly	Tyr	Val	Cys	Glu	Gly	Asp	His	Lys	Thr	Met	Ala	Lys
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Ala Ile Lys Asp Arg Val Ser Leu Ile Lys Arg Lys Arg Glu Gln Arg
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 Gln Leu Val Arg Glu Glu Gln Glu Lys Lys Lys Glu Glu Glu Ser Ser
 515 520 525
 Leu Lys Gln Gln Val Glu Gln Ser Ser Ala Ser Gln Thr Gly Ile Lys
 530 535 540
 Gln Leu Pro Ser Ala Ser Thr Gly Ile Pro Thr Ala Ser Thr Thr Ser
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 Ala Ser Val Ser Thr Gln Val Glu Pro Glu Glu Pro Glu Ala Asp Gln
 565 570 575
 His Gln Gln Leu Gln Tyr Gln Gln Pro Ser Ile Ser Val Leu Ser Asp
 580 585 590
 Gly Thr Val Asp Ser Gly Gln Gly Ser Ser Val Phe Thr Thr Ser Arg
 595 600 605
 Val Ser Ser Gln Gln Thr Val Ser Tyr Gly Ser Gln His Glu Gln Ala
 610 615 620
 His Ser Thr Gly Thr Val Pro Gly His Ile Pro Ser Thr Val Gln Ala
 625 630 635 640
 Gln Ser Gln Pro His Gly Val Tyr Pro Pro Ser Ser Val Gln Gln Gly
 645 650 655
 Ile Gln Gln Thr Ala Pro Pro Gln Gln Thr Val Gln Tyr Ser Leu Ser
 660 665 670
 Gln Thr Ser Thr Ser Ser Glu Ala Thr Thr Ala Gln Pro Val Ser Gln
 675 680 685
 Pro Gln Ala Pro Gln Val Leu Pro Gln Val Ser Ala Gly Lys Gln Gly
 690 695 700
 Phe Pro Pro Arg Leu Pro Pro Gln Tyr Pro Gly Asp Ser Asn Ile Ala
 705 710 715 720
 Pro Ser Ser Asn Val Ala Ser Val Cys Ile His Ser Thr Val Leu Xaa
 725 730 735
 Pro Pro Met Pro Thr Glu Val Leu Ala Thr Pro Gly Tyr Phe Pro Thr
 740 745 750
 Val Val Gln Pro Tyr Val Glu Ser Asn Leu Leu Val Pro Met Gly Gly
 755 760 765
 Val Gly Gly Gln Val Gln Val Ser Gln Pro Gly Gly Ser Leu Ala Gln
 770 775 780
 Ala Pro Thr Thr Ser Ser Gln Gln Ala Val Leu Glu Ser Thr Gln Gly
 785 790 795 800
 Val Ser Gln Val Ala Pro Ala Glu Pro Val Ala Val Ala Gln Pro Gln
 805 810 815
 Ala Thr Gln Pro Thr Thr Leu Ala Ser Ser Val Asp Ser Ala His Ser
 820 825 830
 Asp Val Ala Ser Gly Met Ser Asp Gly Asn Glu Asn Val Pro Ser Ser
 835 840 845
 Ser Gly Arg His Glu Gly Arg Thr Thr Lys Arg His Tyr Arg Lys Ser
 850 855 860
 Val Arg Ser Arg Ser Arg His Glu Lys Thr Ser Arg Pro Lys Leu Arg
 865 870 875 880
 Ile Leu Asn Val Ser Asn Lys Gly Asp Arg Val Val Glu Cys Gln Leu
 885 890 895
 Glu Thr His Asn Arg Lys Met Val Thr Phe Lys Phe Asp Leu Asp Gly
 900 905 910
 Asp Asn Pro Glu Glu Ile Ala Thr Ile Met Val Asn Asn Asp Phe Ile
 915 920 925
 Leu Ala Ile Glu Arg Glu Ser Phe Val Asp Gln Val Arg Glu Ile Ile
 930 935 940
 Glu Lys Ala Asp Glu Met Leu Ser Glu Asp Val Ser Val Glu Pro Glu
 945 950 955 960
 Gly Asp Gln Gly Leu Glu Ser Leu Gln Gly Lys Asp Asp Tyr Gly Phe
 965 970 975
 Ser Gly Ser Gln Lys Leu Glu Gly Glu Phe Lys Gln Pro Ile Pro Ala
 980 985 990
 Ser Ser Met Pro Gln Gln Ile Gly Ile Pro Thr Ser Ser Leu Thr Gln

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Val Val His Ser Ala Gly Arg Arg Phe Ile Val Ser Pro Val Pro Glu		
1010	1015	1020
Ser Arg Leu Arg Glu Ser Lys Val Phe Pro Ser Glu Ile Thr Asp Thr		
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Val Ala Ala Ser Thr Ala Gln Ser Pro Gly Met Asn Leu Ser His Ser		
	1045	1050
Ala Ser Ser Leu Ser Leu Gln Gln Ala Phe Ser Glu Leu Arg Arg Ala		
	1060	1065
Gln Met Thr Glu Gly Pro Asn Thr Ala Pro Pro Asn Phe Ser His Thr		
	1075	1080
Gly Pro Thr Phe Pro Val Val Pro Pro Phe Leu Ser Ser Ile Ala Gly		
	1090	1095
Val Pro Thr Thr Ala Ala Ala Thr Ala Pro Val Pro Ala Thr Ser Ser		
1105	1110	1115
Pro Pro Asn Asp Ile Ser Thr Ser Val Ile Gln Ser Glu Val Thr Val		
	1125	1130
Pro Thr Glu Glu Gly Ile Ala Gly Val Ala Thr Ser Thr Gly Val Val		
	1140	1145
Thr Ser Gly Gly Leu Pro Ile Pro Pro Val Ser Glu Ser Pro Val Leu		
	1155	1160
Ser Ser Val Val Ser Ser Ile Thr Ile Pro Ala Val Val Ser Ile Ser		
	1170	1175
Thr Thr Ser Pro Ser Leu Gln Val Pro Thr Ser Thr Ser Glu Ile Val		
1185	1190	1195
Val Ser Ser Thr Ala Leu Tyr Pro Ser Val Thr Val Ser Ala Thr Ser		
	1205	1210
Ala Ser Ala Gly Gly Ser Thr Ala Thr Pro Gly Pro Lys Pro Pro Ala		
	1220	1225
Val Val Ser Gln Gln Ala Ala Gly Ser Thr Thr Val Gly Ala Thr Leu		
	1235	1240
Thr Ser Val Ser Thr Thr Thr Ser Phe Pro Ser Thr Ala Ser Gln Leu		
	1250	1255
Ser Ile Gln Leu Ser Ser Ser Thr Ser Thr Pro Thr Leu Ala Glu Thr		
1265	1270	1275
Val Val Val Ser Ala His Ser Leu Asp Lys Thr Ser His Ser Ser Thr		
	1285	1290
Thr Gly Leu Ala Phe Ser Leu Ser Ala Pro Ser Ser Ser Ser Pro		
	1300	1305
Gly Ala Gly Val Ser Ser Tyr Ile Ser Gln Pro Gly Gly Leu His Pro		
	1315	1320
Leu Val Ile Pro Ser Val Ile Ala Ser Thr Pro Ile Leu Pro Gln Ala		
	1330	1335
Ala Gly Pro Thr Ser Thr Pro Leu Leu Pro Gln Val Pro Ser Ile Pro		
1345	1350	1355
Pro Leu Val Gln Pro Val Ala Asn Val Pro Ala Val Gln Gln Thr Leu		
	1365	1370
Ile His Ser Gln Pro Gln Pro Ala Leu Leu Pro Asn Gln Pro His Thr		
	1380	1385
His Cys Pro Glu Val Asp Ser Asp Thr Gln Pro Lys Ala Pro Gly Ile		
	1395	1400
Asp Asp Ile Lys Thr Leu Glu Glu Lys Leu Arg Ser Leu Phe Ser Glu		
	1410	1415
His Ser Ser Ser Gly Ala Gln His Ala Ser Val Ser Leu Glu Thr Ser		
1425	1430	1435
Leu Val Ile Glu Ser Thr Val Thr Pro Gly Ile Pro Thr Thr Ala Val		
	1445	1450
Ala Pro Ser Lys Leu Leu Thr Ser Thr Thr Ser Thr Cys Leu Pro Pro		
	1460	1465
Thr Asn Leu Pro Leu Gly Thr Val Ala Leu Pro Val Thr Pro Val Val		
	1475	1480
Thr Pro Gly Gln Val Ser Thr Pro Val Ser Thr Thr Thr Ser Gly Val		
1490	1495	1500

Lys Pro Gly Thr Ala Pro Ser Lys Pro Pro Leu Thr Lys Ala Pro Val
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 Leu Pro Val Gly Thr Glu Leu Pro Ala Gly Thr Leu Pro Ser Glu Gln
 1525 1530 1535
 Leu Pro Pro Phe Pro Gly Pro Ser Leu Thr Gln Ser Gln Gln Pro Leu
 1540 1545 1550
 Glu Asp Leu Asp Ala Gln Leu Arg Arg Thr Leu Ser Pro Glu Xaa Ile
 1555 1560 1565
 Thr Val Thr Ser Ala Val Gly Pro Val Ser Met Ala Ala Pro Thr Ala
 1570 1575 1580
 Ile Thr Glu Ala Gly Thr Gln Pro Gln Lys Gly Val Ser Gln Val Lys
 1585 1590 1595
 Glu Gly Pro Val Leu Ala Thr Ser Ser Gly Ala Gly Val Phe Lys Met
 1605 1610 1615
 Gly Arg Phe Gln Val Ser Val Ala Ala Asp Gly Ala Gln Lys Glu Gly
 1620 1625 1630
 Lys Asn Lys Ser Glu Asp Ala Lys Ser Val His Phe Glu Ser Ser Thr
 1635 1640 1645
 Ser Glu Ser Ser Val Leu Ser Ser Ser Pro Glu Ser Thr Leu Val
 1650 1655 1660
 Lys Pro Glu Pro Asn Gly Ile Thr Ile Pro Gly Ile Ser Ser Asp Val
 1665 1670 1675
 Pro Glu Ser Ala His Lys Lys Thr Thr Ala Ser Glu Ala Lys Ser Asp Thr
 1685 1690 1695
 Gly Gln Pro Thr Lys Val Gly Arg Phe Gln Val Thr Thr Thr Ala Asn
 1700 1705 1710
 Lys Val Gly Arg Phe Ser Val Ser Lys Thr Glu Asp Lys Ile Thr Asp
 1715 1720 1725
 Thr Lys Lys Glu Gly Pro Val Ala Ser Pro Pro Phe Met Asp Leu Glu
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 Gln Ala Val Leu Pro Ala Val Ile Pro Lys Lys Glu Lys Pro Glu Leu
 1745 1750 1755
 Ser Glu Pro Ser His Leu Asn Gly Pro Ser Ser Asp Pro Glu Ala Ala
 1765 1770 1775
 Phe Leu Ser Arg Asp Val Asp Asp Gly Ser Gly Ser Pro His Ser Pro
 1780 1785 1790
 His Gln Leu Ser Ser Lys Ser Leu Pro Ser Gln Asn Leu Ser Gln Ser
 1795 1800 1805
 Leu Ser Asn Ser Phe Asn Ser Ser Tyr Met Ser Ser Asp Asn Glu Ser
 1810 1815 1820
 Asp Ile Glu Asp Glu Asp Leu Lys Leu Glu Leu Arg Arg Leu Arg Asp
 1825 1830 1835
 Lys His Leu Lys Glu Ile Gln Asp Leu Gln Ser Arg Gln Lys His Glu
 1845 1850 1855
 Ile Glu Ser Leu Tyr Thr Lys Leu Gly Lys Val Pro Pro Ala Val Ile
 1860 1865 1870
 Ile Pro Pro Ala Ala Pro Leu Ser Gly Arg Arg Arg Arg Pro Thr Lys
 1875 1880 1885
 Ser Lys Gly Ser Lys Ser Ser Arg Ser Ser Ser Leu Gly Asn Lys Ser
 1890 1895 1900
 Pro Gln Leu Ser Gly Asn Leu Ser Gly Gln Ser Ala Ala Ser Val Leu
 1905 1910 1915
 His Pro Gln Gln Thr Leu His Pro Pro Gly Asn Ile Pro Glu Ser Gly
 1925 1930 1935
 Gln Asn Gln Leu Leu Gln Pro Leu Lys Pro Ser Pro Ser Ser Asp Asn
 1940 1945 1950
 Leu Tyr Ser Ala Phe Thr Ser Asp Gly Ala Ile Ser Val Pro Ser Leu
 1955 1960 1965
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 1970 1975 1980
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 Trp Glu Thr Ser

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 ggaaaaacag gtctccacc tcgactgcca ccacagtacc caggagattc aaatattgct 2160
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 Leu Glu Leu Pro Gly Leu Pro Leu Ser Leu Pro Gln Pro Ser Ile Pro
 35 40 45

Ala	Ala	Val	Pro	Gln	Ser	Ala	Pro	Pro	Glu	Pro	His	Arg	Glu	Glu	Thr
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Val	Thr	Ala	Thr	Ala	Thr	Ser	Gln	Val	Ala	Gln	Gln	Pro	Pro	Ala	Ala
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Ala	Ala	Pro	Gly	Glu	Gln	Ala	Val	Ala	Gly	Pro	Ala	Pro	Ser	Thr	Val
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Pro	Ser	Ser	Thr	Ser	Lys	Asp	Arg	Pro	Val	Ser	Gln	Pro	Ser	Leu	Val
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Gly	Ser	Lys	Glu	Glu	Pro	Pro	Pro	Ala	Arg	Ser	Gly	Ser	Gly	Gly	Gly
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Ser	Ala	Lys	Glu	Pro	Gln	Glu	Glu	Arg	Ser	Gln	Gln	Asp	Asp	Ile	
	130				135						140				
Glu	Glu	Leu	Glu	Thr	Lys	Ala	Val	Gly	Met	Ser	Asn	Asp	Gly	Arg	Phe
	145				150					155					160
Leu	Lys	Phe	Asp	Ile	Glu	Ile	Gly	Arg	Gly	Ser	Phe	Lys	Thr	Val	Tyr
			165						170					175	
Lys	Gly	Leu	Asp	Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu
	180							185					190		
Gln	Asp	Arg	Lys	Leu	Thr	Lys	Ser	Glu	Arg	Gln	Arg	Phe	Lys	Glu	Glu
	195						200					205			
Ala	Glu	Met	Leu	Lys	Gly	Leu	Gln	His	Pro	Asn	Ile	Val	Arg	Phe	Tyr
	210					215									
Asp	Ser	Trp	Glu	Ser	Thr	Val	Lys	Gly	Lys	Lys	Cys	Ile	Val	Leu	Val
	225				230					235				240	
Thr	Glu	Leu	Met	Thr	Ser	Gly	Thr	Leu	Lys	Thr	Tyr	Leu	Lys	Arg	Phe
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Lys	Val	Met	Lys	Ile	Lys	Val	Leu	Arg	Ser	Trp	Cys	Arg	Gln	Ile	Leu
			260					265					270		
Lys	Gly	Leu	Gln	Phe	Leu	His	Thr	Arg	Thr	Pro	Pro	Ile	Ile	His	Arg
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Asp	Leu	Lys	Cys	Asp	Asn	Ile	Phe	Ile	Thr	Gly	Pro	Thr	Gly	Ser	Val
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Lys	Ile	Gly	Asp	Leu	Gly	Leu	Ala	Thr	Leu	Lys	Arg	Ala	Ser	Phe	Ala
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Glu	Lys	Tyr	Asp	Glu	Ser	Val	Asp	Val	Tyr	Ala	Phe	Gly	Met	Cys	Met
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Leu	Glu	Met	Ala	Thr	Ser	Glu	Tyr	Pro	Tyr	Ser	Glu	Cys	Gln	Asn	Ala
	355						360					365			
Ala	Gln	Ile	Tyr	Arg	Arg	Val	Thr	Ser	Gly	Val	Lys	Pro	Ala	Ser	Phe
	370					375					380				
Asp	Lys	Val	Ala	Ile	Pro	Glu	Val	Lys	Glu	Ile	Ile	Glu	Gly	Cys	Ile
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Arg	Gln	Asn	Lys	Asp	Glu	Arg	Tyr	Ser	Ile	Lys	Asp	Leu	Leu	Asn	His
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Ala	Phe	Phe	Gln	Glu	Glu	Thr	Gly	Val	Arg	Val	Glu	Leu	Ala	Glu	Glu
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Asp	Asp	Gly	Glu	Lys	Ile	Ala	Ile	Lys	Leu	Trp	Leu	Arg	Ile	Glu	Asp
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Ile	Lys	Lys	Leu	Lys	Gly	Lys	Tyr	Lys	Asp	Asn	Glu	Ala	Ile	Glu	Phe
	450				455					460					
Ser	Phe	Asp	Leu	Glu	Arg	Asp	Val	Pro	Glu	Asp	Val	Ala	Gln	Glu	Met
	465				470					475				480	
Val	Glu	Ser	Gly	Tyr	Val	Cys	Glu	Gly	Asp	His	Lys	Thr	Met	Ala	Lys
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Gln	Leu	Val	Arg	Glu	Glu	Gln	Glu	Lys	Lys	Lys	Gln	Glu	Glu	Ser	Ser
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Leu	Lys	Gln	Gln	Val	Glu	Gln	Ser	Ser	Ala	Ser	Gln	Thr	Gly	Ile	Lys
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Gln	Leu	Pro	Ser	Ala	Ser	Thr	Gly	Ile	Pro	Thr	Ala	Ser	Thr	Thr	Ser

545 550 555 560
Ala Ser Val Ser Thr Gln Val Glu Pro Glu Glu Pro Glu Ala Asp Gln
565 570 575
His Gln Gln Leu Gln Tyr Gln Gln Pro Ser Ile Ser Val Leu Ser Asp
580 585 590
Gly Thr Val Asp Ser Gly Gln Gly Ser Ser Val Phe Thr Glu Ser Arg
595 600 605
Val Ser Ser Gln Gln Thr Val Ser Tyr Gly Ser Gln His Glu Gln Ala
610 615 620
His Ser Thr Gly Thr Val Pro Gly His Ile Pro Ser Thr Val Gln Ala
625 630 635 640
Gln Ser Gln Pro His Gly Val Tyr Pro Pro Ser Ser Val Gln Gln Gly
645 650 655
Ile Gln Gln Thr Ala Pro Pro Gln Gln Thr Val Gln Tyr Ser Leu Ser
660 665 670
Gln Thr Ser Thr Ser Ser Glu Ala Thr Thr Ala Gln Pro Val Ser Gln
675 680 685
Pro Gln Ala Pro Gln Val Leu Pro Gln Val Ser Ala Gly Lys Gln Gly
690 695 700
Phe Pro Pro Arg Leu Pro Pro Gln Tyr Pro Gly Asp Ser Asn Ile Ala
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<212> DNA
<213> Homo sapiens

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50 55 60
Val Thr Ala Thr Ala Thr Ser Gln Val Ala Gln Gln Pro Pro Ala Ala
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Pro Ser Ser Thr Ser Lys Asp Arg Pro Val Ser Gln Pro Ser Leu Val
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Lys Ile Gly Asp Leu Gly Leu Ala Thr Leu Lys Arg Ala Ser Phe Ala
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 Lys His Glu Ile Glu Ser Leu Tyr Thr Lys Leu Gly Lys Val Pro Pro
 1765 1770 1775
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 1780 1785 1790
 Pro Thr Lys Ser Lys Gly Ser Lys Ser Ser Arg Ser Ser Ser Leu Gly
 1795 1800 1805
 Asn Lys Ser Pro Gln Leu Ser Gly Asn Leu Ser Gly Gln Ser Ala Ala
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1825 1830 1835 1840
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 Ser Asp Asn Leu Tyr Ser Ala Phe Thr Ser Asp Gly Ala Ile Ser Val
 1860 1865 1870
 Pro Ser Leu Ser Ala Pro Gly Gln Gly Thr Ser Ser Thr Asn Thr Val
 1875 1880 1885
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 Thr Ser Ser Arg Lys Gly Thr Phe Thr Asp Asp Leu His Lys Leu Val
 1905 1910 1915 1920
 Asp Asn Trp Ala Arg Asp Ala Met Asn Leu Ser Gly Arg Arg Gly Ser
 1925 1930 1935
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Lys	Gly	Leu	Asp	Thr	Glu	Thr	Thr	Val	Glu	Val	Ala	Trp	Cys	Glu	Leu
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